The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 74, NO. 13 CHICAGO, ILLINOIS MARCH 27, 1920

LETHARGIC ENCEPHALITIS

HISTORY, PATHOLOGIC AND CLINICAL FEATURES, AND EPIDEMIOLOGY IN BRIEF *

SIMON FLEXNER, M.D.

NEW YORK

It is of more than ordinary interest that within the last dozen years at least two epidemic diseases, affecting chiefly the central nervous system, have prevailed widely in Europe and America. The first is poliomyelitis, which since 1907 has passed through several phases in the United States and culminated in the outbreak of unparalleled severity, centering in New York State, in 1916. The second is lethargic encephalitis, apparently only recently introduced in and already widely distributed through this country. It is highly desirable that the main facts known about the latter disease should be given publicity; and it may well be that the experience, often of tragic nature, gained with poliomyelitis, may serve us in dealing more effectively with the encephalitis peril. Hence, by way of introduction, I shall sketch the recent history of poliomyelitis.

POLIOMYELITIS

The occurrence of poliomyelitis in America and generally in Europe beginning in 1907 followed, it now appears, the severe epidemics of Norway and Sweden, which reached a first climax in 1905. Indeed, poliomyelitis became so widespread after 1905 that it may be regarded as having become pandemic. Besides Europe and the United States, South America, Australasia and the far eastern countries all were involved. Poliomyelitis, it is true, had been mildly epidemic in the United States before 1907; but the most severe of the earlier outbreaks were inconspicuous as compared with the later ones, both as regards the number of persons affected and the territory invaded. Thus, the severe Vermont epidemic of 1894 included 130 cases; and it is worth noting that no extension into distant territory followed in its wake.

It is customary to ascribe to Wickman, who studied the Swedish epidemic of 1905, and gave to the world in 1907 his remarkable book on epidemic poliomyelitis,[1] the first account of the so-called abortive cases of poliomyelitis. But Caverly, who studied the Vermont outbreak,[2] clearly described cases which did not go on to frank paralysis, but terminated in prompt recovery after symptoms which seemed to presage the onset of paralysis. As these "imperfect" or nonparalytic instances arose along with the frankly paralytic cases, it seemed to Caverly that they belonged in the same category with the latter. This conception is now abundantly justified. And it is due to Wickman that the abortive type of cases of epidemic poliomyelitis is so widely recognized. The epidemiologic significance of the abortive cases is considerable, since many are ambulatory and most are invalided for a few days at most; they thus furnish a ready means of distributing freely the inciting microbic agent or virus of poliomyelitis in their surroundings. From the public health point of view, the abortive and ambulatory cases of poliomyelitis are more dangerous than the frankly paralytic, since by the very nature of the circumstances the latter are restricted in their contact with healthy persons.

We may think that the forerunners of these epidemics of poliomyelitis were imported into the United States about 1906 or 1907; that the cases of the disease or carriers of the virus first had merely local distribution, but that gradually the conditions favoring a wider spread of the disease became more extensively developed; that thus the more numerous and severer outbreaks arose; until finally, conditions in certain localities having become highly favorable, the terrific explosion with its thousands of paralyzed patients occurred in 1916, since which time the disease, while still present, has reverted to a relatively quiescent state.

The medical profession in general in the United States in 1907 was not informed and ready to deal with the epidemic of poliomyelitis. Practically none of the profession had had previous experience with the disease except in its rare sporadic form, which at first seemed improbably connected etiologically with the epidemic affection. Few physicians knew of the succession of outbreaks, small and large, that for many years had been going on in Norway and Sweden. When, therefore, the epidemic appeared in the United States, there was inevitable confusion of diagnosis, lack of understanding of the infectious nature of the disease and the degree of its communicability, uncertainty as to the public health policy to be pursued, and, finally, in places an undue harshness in the endeavor to curtail its ravages.

Gradually a deeper knowledge of the disease by the profession at large has removed many of these disabilities, and a wider understanding of its atypical forms is rendering feasible the early and more complete institution of those protective public health measures with which hope of better control of epidemics is inseparably connected.

LETHARGIC ENCEPHALITIS—HISTORICAL

With this introduction, I shall now consider certain historical points regarding lethargic encephalitis. It

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Wickman, I.: Beiträge zur Kenntnis der Heine-Medinschen Krankheit, Berlin, 1907.
2. Caverly, C. S.: Med. Rec. 46: 673, 1894.

appears that the first cases of that disease recognized in the United States occurred in the winter of 1918-1919. In contradistinction to epidemic poliomyelitis, there is no reason to suppose that this epidemic affection of the central nervous system ever before existed in America. This point is an important one. At present the disease seems to be widely distributed, as cases have been reported from many states.

It is possible to trace the cases of lethargic, or epidemic encephalitis, now arising in this country, to an outbreak which occurred in Vienna and neighboring parts of Austria in the winter of 1916.[3] Because of war conditions, knowledge of this unusual disease did not at once reach western Europe and the United States; but nevertheless cases of the disease occurred in England and France in the early months of 1918, and in America about one year later.

Both in Austria and in England, in which countries the first cases were observed, respectively, in eastern and western Europe, the disease was first mistakenly attributed to food intoxications. In Austria the early cases were ascribed to sausage poisoning, in England to botulism arising from various foods.[4]

This error is not perhaps as remarkable as might at first sight appear. In the first place, both countries were laboring under unprecedented conditions of food shortage, Austria because of the blockade, England because of the submarine. Moreover, because of this shortage, preserved foods were employed on a scale never before equaled, and, of course, waste and refuse were reduced to a minimum. Furthermore, an early symptom of this encephalitis is third nerve paralysis—giving rise to diplopia, ptosis, etc.—which happens also to be an early symptom in certain forms of food poisoning and notably in botulism.

Ultimately, in both countries the notion of food origin became untenable, and the disease was recognized as arising independently of diet and other usual conditions of life, and came to be viewed as probably of microbic origin and of communicable nature.

PATHOLOGIC

The first fatal cases, which occurred in Vienna, supplied on histologic study a physical basis for the symptoms observed during life; and the first English and French cases similarly examined microscopically showed lesions identical with those described for the Austrian cases. In due time the anatomic study of cases arising in the United States and still other countries showed close agreement with the others, and now a histologic basis of the pathology of the disease, of remarkable concordance, has been provided. On this basis we may now regard lethargic encephalitis as representing a definite pathologic as well as clinical complex, and to consider it as a distinct disease.

The histologic changes or lesions of lethargic encephalitis may be both extensive and profound. Those so far described as confined to the central nervous system affect particularly the brain and especially the gray matter at the base of that organ. While, indeed, any part of the gray matter may be involved, and lesions are found in the cortex and in the cerebellum, the structures particularly affected are those about the third ventricle, the aqueduct of Sylvius, the lateral ventricle and optic thalamus, and the pons and medulla. The spinal cord is variably involved. In general, it may be stated that the severity of the cerebral lesions diminishes from before backward; the upper or cervical cord often shows changes; but it is still to be determined how often and to what extent the cord as a whole is affected.

The lesions themselves consist of cellular aggregations about the blood vessels, cellular infiltrations in the nerve tissues themselves, small, often microscopic hemorrhages, and an outpouring of plasma or lymph into the tissue interstices (edema). The cellular accumulations and invasions are chiefly mononuclear in nature (lymphocytes, plasma cells, polyblasts); polymorphonuclear cells are also encountered, but are relatively inconspicuous. The lesions themselves occur in nodular and in diffuse forms; and those of the tissues are at times clearly associated with the vascular affections and at other times are so extensive as not to be brought into relation with particular vascular involvements. The paralyses of the ocular, facial and other muscles which sometimes occur arise, with rare exceptions, from the cellular and other invasions of the nuclei of the corresponding nerves.

CLINICAL

The clinical phenomena or symptoms of lethargic encephalitis are referable to the lesions of the central nervous organs or the pathologic process, as sketched. It is perhaps too early in the study of the disease to set up hard and fast clinical varieties or types. However, attempts at classification have already been made. One of the most comprehensive is that of MacNalty,[5] which is reproduced here, as it is suggestive and may prove useful in practice. MacNalty distinguishes six groups of cases: (1) cases with general symptoms and without localizing signs; (2) cases with third nerve paralysis and general disturbance in the function of the central nervous system; (3) cases with facial paralysis and general disturbance in the function of the central nervous system; (4) cases with spinal manifestations and general disturbance in the function of the central nervous system; (5) cases with polyneuritic manifestations and general disturbance in the function of the central nervous system, and (6) cases with mild or transient manifestations (so-called "abortive" cases). To these should be added cases of paralysis of other motor cranial nerves than the third and fifth, such as those of deglutition and respiration.

Probably there is an incubation and prodromal period which precedes the onset of the striking subjective and objective symptoms of the disease; but thus far these have not been defined. Hence the so-called onset of the disease is usually described as sudden or acute. The latter is, indeed, so striking that the patient is able often to tell the precise hour of a particular day on which he fell ill. Actually the striking symptoms often develop more slowly than in poliomyelitis.

The initial symptoms are described as chills, lassitude and general malaise, headache and general pains, nausea and anorexia, associated often with the common symptoms of upper respiratory catarrhal affections. Fever is an irregular manifestation. It may be present at onset or may appear only later. The temperature range tends not to be high—from 101 to 102—but it sometimes swings to 103 or 104. As the symptoms develop there arise lethargy or drowsiness, vertigo, tinnitus, muscular weakness, blurred or misty vision, diplopia, photophobia, tremors and twitchings, ataxia, delirium, irritability, restlessness, mental depression and other

3. Von Economo, C.: Die Encephalitis Lethargica, Vienna, 1918.
4. Report of an Enquiry into an Obscure Disease, Encephalitis Lethargica, Report to the Local Government Board, No. 121, London, 1918.

5. MacNalty, A. S. (Footnote 4) p. 12.

alterations, difficulty in articulation and in swallowing, stiffness of neck and spasticity of other muscles, sweating, hiccup, etc. Among the earliest symptoms to arrest the attention of the patient and the physician are diplopia and ptosis with varying degrees of lethargy. But still other paralyses (e. g., facial) may appear, and the lethargy may arise independently of all localizing nervous signs.

The outstanding feature of the disease is the lethargy, which is progressive in character and present in the great majority of cases (80 per cent.?). It may appear suddenly, but usually is gradual in onset. The patient becomes apathetic and dull, appears dazed or stupid, the hours of sleep become prolonged, and he is hard to wake in the morning. Moreover, he may fall asleep at odd hours—while engaged at work or at mealtime. The lethargy may deepen into stupor or even into coma. Its duration is variable—a week, a month or even longer—up to four months. Even after long periods, recovery may still follow. During the lethargy, there may be lack of facial expression (masklike features). The usual state is one suggesting profound sleep, from which the patient can be aroused by loud speaking, prodding, etc., to partake of food or answer questions. But cases in which marked restlessness and even mania have been present followed by lethargy have been noted.

Symptoms referable to irritations of the meninges appear. Usually they are slight, and while sometimes arousing suspicion of acute meningitis, that condition is excluded by lumbar puncture and examination of the cerebrospinal fluid. The fluid tends to be under somewhat increased pressure, but clear. The number of cells is slightly increased (very rarely 100 per cubic millimeter), and the globulin content little and sometimes not at all excessive. The cells, which range usually around 10 to 20 per cubic millimeter, consist partly of mononuclear and partly of polymorphonuclear leukocytes. In addition, the important point of the rare presence of Kernig's sign should be mentioned.

The occurrence of paralyses of the face muscles has been mentioned. Paralysis of the extremities is rare: wrist drop has been noted in at least one instance. But a far more common symptom is rigidity or spasticity, chiefly of the extremities, which in a few cases has been observed to extend to the spinal and even the facial muscles, making a picture suggestive of paralysis agitans. This spasticity of the extremities is ascribable to involvement in the encephalitic process of the lenticular nucleus and the corpus striatum.

The duration of the stupor is very variable; it may last a few days, for weeks or even for months, and recovery still take place. The return to clear mentality is usually gradual; muscular power also tends to return slowly, and general convalescence tends to be prolonged. In paralytic examples of the disease, rapid, complete or partial clearing of the palsies has been noted.

The number of cases of undoubted lethargic encephalitis thus far reported is too small to indicate the age periods of greatest incidence. For the present it may be stated that the disease occurs at all ages, namely, from a few months to advanced years (over 70 years). Likewise, it appears as if the two sexes were about equally attacked.

The fatalities reported range from 20 to 35 or 40 per cent. Probably the higher mortalities refer to groups of the severer cases of the disease. Since knowledge of the disease is still very restricted and diagnosis still in its beginnings, probably many cases of lighter affection are overlooked or given other names and interpretations, thus making it impossible at present to arrive at an accurate estimation of the prognosis and mortality. At best, however, the disease is to be regarded as serious, whether from the point of view of long duration from onset to restoration to health, or of fatality. The chief immediate causes of death reported have been intercurrent pneumonia and paralysis of the respiratory center in the medulla.

Present indications are that the degree of communicability of lethargic encephalitis or susceptibility to the disease is low, possibly equaling that of epidemic poliomyelitis as observed in ordinary times. The seasonal incidence seems to be midwinter, in that respect resembling epidemic meningitis and differing widely from epidemic poliomyelitis, which prevails usually in midsummer and early autumn.

Explanations of the lethargic state have been offered. A toxic origin is, of course, possible. It seems more likely, however, in view of the nature and distribution of the lesions, that its source is rather a mechanical one. It is known that the sensory stimuli from the special and other senses pass by way of the thalamus to the cerebral cortex.[6] Since, therefore, the thalamus is so commonly the seat of the cellular infiltrative lesions described, it would appear that the stimuli are interrupted in that organ on the way to the cortex, whence a kind of sleep supervenes. The obstruction to the stimuli is not absolute, since the patient can be aroused by increasing their intensity (as by loud speaking, prodding, etc.)

EPIDEMIOLOGIC

It is now sufficiently obvious why the popular name of "sleeping sickness" has been applied to this malady. The disease is, of course, wholly distinct from African sleeping sickness, which is a trypanosomal infection carried from person to person by means of an insect vector—the tsetse fly.

When an apparently new disease arises, it is always important to inquire whether the particular set of symptoms that are taken to characterize it has been observed and recorded before.

In the present instance there are two significant records which may easily refer to a similar and possibly identical disease. The first one dates from 1712 and refers to an outbreak of so-called sleeping sickness centering about Tübingen in Germany. The second record dates from 1890 and deals with a rather puzzling malady called nona, which is described rather in the lay than the medical literature of the time and seems to have prevailed in the territory bounded by Austria, Italy and Switzerland. In respect to neither instance, however, do the records contain the minuter data which would admit of a certain identification of the disease described with the encephalitic malady we are considering.

One circumstance is, however, significantly suggestive. The location of the 1890 affection "nona," [7] which was characterized by somnolence, stupor and coma, coincides roughly at least with that of the first cases reported in the present epidemic. The question may, therefore, well be raised whether the endemic home of this epidemic variety of encephalitis may not be that corner of southeastern Europe overlapping the three countries mentioned. If this should prove to be prob-

6. Head, H., and Holmes, G.: Brain 34: 102, 1911-1912.
7. The etymology of this term is not known. It has been suggested that it is merely a corruption of the term "coma."

able, the next questions to arise would relate to the circumstances under which the disease slumbered on in ordinary times, and to the conditions that favored a greater activity and a wider spread about the year 1916.

To deal with the first one will require particular and intensive studies carried out with the especial object in view to disclose hidden cases in the region originally affected. An answer can in the meantime be hazarded to the second question. The depressing effects of war, acting by way of hunger, cold, migrations of populations, and general insanitation, might initiate the conditions through which a low endemic might well be converted into a higher epidemic incidence of the disease.

In effect, a similar set of depressing and favoring conditions may be supplied by a highly debilitating and destructive epidemic, such as the periodic waves of pandemic influenza which recur from time to time. In this manner may possibly be explained the coincidence of the Tübingen epidemic of 1712, also called sleeping sickness, and of the "nona" of 1890 with epidemic influenza, just as the wider distribution of the encephalitic malady and the influenza epidemics of 1918 and of 1920 may be similarly associated. In other words, what the depressing circumstances of the war did for Austria-Hungary in 1916, the pandemic of influenza may have done for the rest of the world in 1918 and subsequently, namely, prepare the soil, as it were, for the growth in number of cases and for increase in intensity and capacity for spread of an infectious nervous disease ordinarily narrowly localized and moderately benign.

This relationship of lethargic encephalitis to the epidemic of influenza has, indeed, led to a discussion as to whether the former is not merely a sequel—early or late—attending a certain, if only small number, of cases of epidemic influenza:

Regarded merely chronologically, the question thus presents itself: In 1916, when the first cases of encephalitis appeared or at least were recognized in Austria, the epidemic of influenza which prevailed later, in 1918, had not yet been noted. In the instances of England, France, the United States and some other countries, the epidemic influenza and cases of lethargic encephalitis were more or less coincidental. Since influenza varies so much in degree of severity, it is of little moment to debate whether or not victims of the encephalitis had previously suffered from influenza.

On the other hand, there is no recognized numerical relationship between the extent of influenza and the number of cases arising, or at least identified, of the encephalitis. It is, of course, true that encephalitis has long been recognized as one of the sequels of epidemic influenza. Indeed, in the etiology of encephalitis, influenza occupies a prominent place; but in no other pandemic of influenza has this remarkable association of encephalitis occurred with certainty. Little weight can be given the supposed coincidence of influenza and the "sleeping sickness" of 1712; and it is highly improbable that the semimysterious affection, "nona," which dates from 1890, should have taken its origin from the influenza epidemic in southeastern Europe at that period and the association not have been observed elsewhere in Europe or even in America at the same time as a concomitant of the influenza epidemic, which raged with great intensity in those countries. Moreover, the occasional cases of encephalitis definitely observed to follow attacks of influenza have presented a more hemorrhagic character, and sometimes have been attended by Pfeiffer bacilli in the nervous tissues and meninges, which is not the case in the lethargic disease we are now considering.

Finally, should the reported experimental transmission of the encephalitis to animals be confirmed, a further distinction from the influenzal variety will have been established. Therefore, the outbreak of lethargic encephalitis either antedated (Austria) the pandemic of influenza of 1918, or (in other countries) the two diseases more or less overlapped, that is, although probably quite by accident, they prevailed concurrently. It is desirable, for the time being at least, to regard them as independent diseases.

The history of lethargic encephalitis indicates its infectious and also its communicable nature, but thus far single rather than multiple cases have been observed in family and other intimate groups of persons. However, two cases in a family have very rarely been noted; and in one instance an institutional outbreak has been reported in which among twenty-one inmates of a girls' home twelve cases arose, with five deaths.[8] Whether more accurate means of diagnosis, through which the nonlocalizing or "abortive" and the frankly paralytic lethargic cases would be more certainly associated and thus lead to a general revision of present views regarding multiple cases, can only be surmised. Obviously, in the interest of knowledge as well as of the prevention of the disease, close attention to this point is desirable.

It is now a matter of great importance to determine the precise nature or etiology of lethargic encephalitis. Many unsuccessful attempts have been made to communicate the disease to monkeys and other animals through the inoculation of nervous tissues showing the particular lesions, in the manner so readily and successfully employed in monkeys for poliomyelitis. This circumstance alone would serve to distinguish this epidemic encephalitis from epidemic poliomyelitis. But in two or three instances, what are stated to be successful transmissions of the disease to animals have been reported.

Von Wiesner[9] of Vienna inoculated a monkey subdurally with nervous tissue from a fatal case of von Economo's. This animal quickly became severely sick and died in about forty-eight hours. At necropsy a meningo-encephalitis was found, and from the lesions a diplostreptococcus was cultivated. While von Wiesner regarded this experiment as successful, further investigation has indicated that the infection with the bacteria was an accidental and secondary process, and the diplostreptococcus is not etiologically related to lethargic encephalitis.

Loewe, Hirshfeld and Strauss[10] inoculated rabbits and monkeys with filtered extracts of the nasopharynx of cases of the encephalitis and, also, with filtered nasopharyngeal washings, and have induced a meningo-encephalitis in those animals. Apparently they did not succeed in infecting those animals by inoculating the affected nerve tissues themselves. They also believe that they have cultivated a minute organism, resembling the globoid bodies of poliomyelitis, which they think may be the inciting microbic agent of the disease. Discrepancies exist between the positive results of these authors and the many failures of others with similar inoculations which only greater experience can clear up.

8. Forty-Eighth Annual Report of the Local Government Board, 1918-1919, Medical Supplement, London, 1919, p. 76.

9. Von Wiesner, R.: Wien. klin. Wchnschr. **30**:933, 1917.

10. Loewe, Leo; Hirshfeld, Samuel, and Strauss, Israel: J. Infect. Dis. **25**:377 (Nov.) 1919.

Finally, McIntosh,[8] of the London Hospital, announced that a monkey inoculated with the material from the fatal cases in the home for girls, already referred to, presented lethargic symptoms and tremors and died. The brain on examination is said to have shown lesions similar to those found in human cases of lethargic encephalitis.

CONCLUSION

The foregoing account represents, in brief, the present state of our knowledge of the interesting and important disease—lethargic or epidemic encephalitis. Obviously, that knowledge is still very imperfect. It is still too soon to say whether or not we are now at the threshold of the clearing up, by way of animal experiment, of the etiology and mode of communication of this menacing disease, as was accomplished so recently, and also by animal experiment, in the case of poliomyelitis. It is to be sincerely hoped that we are. But at this moment, and while waiting for the ultimate and convincing experimental results, one need entertain no doubt of the infectious and communicable nature of lethargic encephalitis.

The belief that lethargic encephalitis is a communicable disease imposes certain responsibilities on the medical profession to limit its spread. The outstanding obligation is perhaps the close study of suspected cases in order to determine their real nature, meanwhile holding them under such conditions of isolation as is usual with this class of diseases. Then every effort should be made to determine the existence of, and to detect and control the ambulant or abortive cases, having in mind that they may be more significant than the frankly lethargic and paralytic ones from the public health point of view. Since the nasopharyngeal secretions have become suspected of harboring the inciting microbic agent, adequate measures of controlling the distribution of those secretions into the surroundings of patients should be carried out. It is self-evident that the physician should invite the cooperation of pathologist and bacteriologist in attacking the unsolved problems presented by this unusual disease. It is to be hoped, indeed, that the disease may not secure a permanent lodgment in the country; on a wider knowledge of its occurrence and a deeper understanding of its nature, which the studies of the immediate future may yield, much, therefore, may depend.

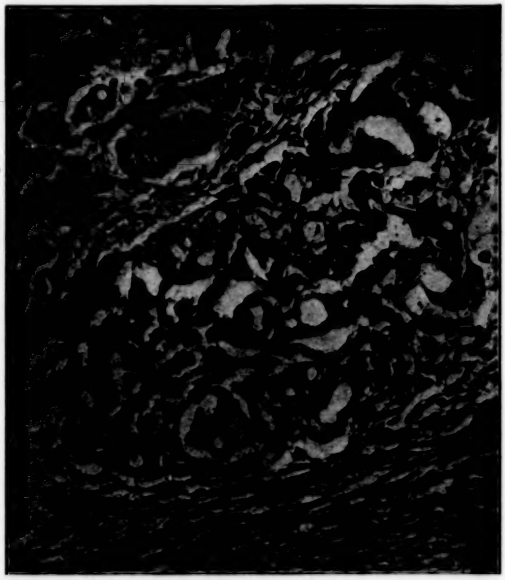


Fig. 1.—Section of stomach under high power: mass of cancer cells infiltrating muscular layers. Photomicrograph by Dr. W. P. Stowe.

CHYLOUS ASCITES DUE TO CARCINOMA OF THE STOMACH

H. V. HENDRICKS, M.D.
Assistant Physician, Traverse City State Hospital
TRAVERSE CITY, MICH.

The case here described is considered interesting enough to deserve a brief report.

REPORT OF CASE

History.—B. J. B., white man, farmer, with a negative family history in regard to malignant disease as far as known, with a brother, however, who was insane and a father who was alcoholic, had had measles, mumps and whooping cough early in life, had used alcohol to some extent, and at 16 years of age had suffered from insolation and had been called "queer" afterward. At 42 he had been kicked in the forehead by a colt, after which his peculiarities had gradually become more pronounced until he finally became more or less violent and, Oct. 28, 1907, at the age of 64, was committed as insane to the Traverse City State Hospital. His condition was regarded as a case of dementia praecox of many years' standing.

Physical Examination.—This was essentially negative except for a few hyaline casts in the urine and slight thickening of the radial arteries.

Clinical Course.—In July, 1915, it was observed that the patient, then 72 years of age, was becoming pale and thin, and that his skin was becoming slightly yellow. August 5, the urine showed a trace of glucose and a few casts; the left pupil was greater than the right and reacted to light better than the right. The knee jerks were very active and equal. August 6, examination of the blood revealed 65 per cent. hemoglobin and 2,912,000 red cells per cubic millimeter which showed a certain amount of variation in size and shape. August 20, after the patient had been kept in bed and given liquor potassii arsenitis (Fowler's solution), the hemoglobin had increased to 80 per cent. and the red cells to 3,832,000.

In September, the patient began to have trouble with his stomach; he vomited more or less, and at times had difficulty in retaining solid food. The improvement under Fowler's solution did not persist, so its use was discontinued. September 28, examination of the heart was negative; the pulse was 118 and of fair tension. On percussion, the lungs showed dulness. Fine crackling râles were heard in the right supraclavicular space, and there were scattered squeaking râles in the lungs. October 14, the blood showed 60 per cent. hemoglobin and 4,800,000 red cells; and the blood smear showed 82 per cent. of polymorphonuclears, 16 per cent. mononuclears,

1 per cent. eosinophils and 1 per cent. mast cells. There was still considerable variation in the size of the red cells. By December 3, the patient had become more emaciated and still had a yellowish hue. Examination of the chest then revealed a few râles in the apexes and diminished resonance at the right apex. On the left side of the neck just above the clavicular space, five or six firm, nontender glands could be felt and seen; the inguinal glands seemed prominent, probably on account of emaciation. The patient grew progressively worse, continued to have trouble with his stomach, and retained nourishment poorly. No blood was ever observed in the vomitus or in the stools, which were always a normal color. Jan. 24, 1916, there was slight dulness at the base of the right lung with a few scattered râles there. The legs and thighs were tender; the left leg was somewhat edematous. At that time, the blood showed 25 per cent. hemoglobin and 3,116,000 red cells; white count revealed 6,700 cells, with 57 per cent. of polymorphonuclears; the red cells were somewhat irregular in shape, but no nucleated red cells were found. The skin became a deeper yellow after this, and a slight puffiness appeared around the eyes. The patient died, Feb. 9, 1916.

Necropsy Findings.—Two and one-half hours after the death of the patient, Dr. F. C. Mayne and I performed the necropsy. The body was slightly built and showed marked emaciation. The thorax was slightly emphysematous and the abdomen was somewhat distended. There was a small trophic ulcer over the right trochanter and another over the sacrum. The skin was slightly atrophic and yellowish brown. The superficial veins of the abdomen were dilated, more so on the left than on the right. The muscles were small and atrophic. There was only a slight amount of rigor mortis. There was a slight amount of edema in the lower extremities, especially in the left.

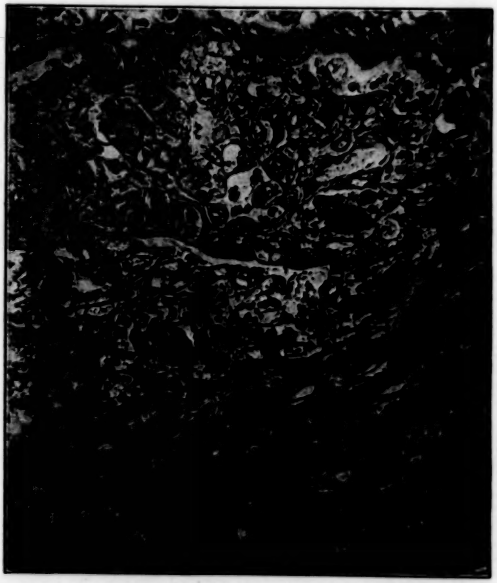


Fig. 2.—Section of liver under high power: edge of metastasis with adjacent liver cells, which have been distorted by pressure. Photomicrograph by Dr. W. P. Stowe.

The abdominal cavity contained no free gas, but it did contain a milky fluid, evidently chyle. This was not measured, but was estimated to be several hundred cubic centimeters. The stomach was large and distended with a large amount of fluid contents. A small, hard mass could be felt at the pylorus. There were adhesions extending from the gallbladder to the duodenum. The omentum was normal, containing very little fat. The intestine was normal in outside appearance and to palpation. At the pyloric end of the stomach, just inside the sphincter, there was a thickening of the stomach wall over an area about 3 cm. in diameter with a depression in the center and a raised hypertrophic border. The head of the pancreas seemed larger and harder than normal. The liver was rather small, and did not extend down to the costal margin. Scattered over its surface were several raised yellow areas ranging from 2 to 20 mm. in diameter. On section the inside of the liver showed these areas also. At the hilum were a number of enlarged lymph glands. The mesentery contained only a little fat, but when it was cut, a milky fluid like that in the peritoneal cavity oozed out from dilated lymphatics. There were many enlarged mesenteric lymph glands, especially in the upper part of the abdomen. The kidneys and suprarenals were not especially remarkable in gross appearance. The spleen was about one-third the normal size, hard and lobulated and rather grayish-brown. The appendix was small and slightly adherent to the cecum.

The thorax contained a few hundred cubic centimeters of clear yellowish fluid in the pleural cavities. The thymus was absent. The pericardium was normal, and there was no excess of pericardial fluid. The heart was small and flabby. The heart valves appeared normal. The heart muscle was yellowish red. The right lung was strongly adherent at the apex and side and in the back. There were adhesions at the apex and at the base and front of the left lung. The latter adhesions were so dense that it was necessary to cut them. There were numerous calcified lymph glands at the hilum of each lung. The aorta showed only a small amount of arteriosclerosis. The thoracic duct was dilated and filled throughout with a milky fluid. There were a number of enlarged glands along the duct in the mediastinum. Just before the duct emptied into the left subclavian vein, it was pressed on by a mass of enlarged supraclavicular lymph glands, evidently causing stasis.

The brain was removed and, after being hardened in toto in formaldehyd, was sent to the state psychopathic hospital at Ann Arbor for examination. The report of Dr. A. M. Barrett was, "Slight leptomeningitis and cystic accumulations over the convexity."

Microscopic Examination.—The mass at the pyloric end of the stomach was found to be scirrhous adenocarcinoma infiltrating the muscle layers. Several portions of the lung were examined. One portion showed a hemorrhagic infarct with atelectasis about it; another portion showed a purulent exudate in the bronchi with scar tissue around them, some completely thrombosed blood vessels, and some blood vessels with thickened walls; and another showed small metastases consisting of carcinoma cells. Various enlarged lymph glands were examined and found to contain metastases. The yellowish areas in the liver when examined microscopically were found to be metastases. On section, the pancreas showed a certain amount of general atrophy and a number of small areas of recent hemorrhage. Some of these showed also abundant polymorphonuclear leukocytes. There were also, largely in the connective tissue, a few small areas of infiltration with small round cells. The spleen showed a thickened, dense capsule with dense trabeculae, and the walls of its blood vessels were dense and hyaline. There was a hypoplasia of the lymphoid elements. Sections of kidney showed an increased amount of connective tissue in the

cortex as well as in the medulla. There were a good many casts, the blood vessels were more or less hyalinized, and the glomeruli were somewhat shrunken. The heart showed probably an increase in connective tissue around the blood vessels.

COMMENT

The conditions found at necropsy were not anticipated during life, although carcinoma of the stomach was strongly suspected. The finding of chyle free in the thoracic cavity, or in the abdominal cavity, or in both, is quite uncommon.

Two articles on this subject have appeared in THE JOURNAL; the first, by Outland and Clendening,[1] and the second, by Tuley and Graves.[2] These articles are recommended to any one especially interested in this subject.

Outland and Clendening reported a case of chylous ascites and chylothorax due to carcinoma of the stomach. They referred to articles by Wallis and Schölberg,[3] who had collected reports of 176 cases (including three of their own) of chylous and chyliform ascites. I have not been able to consult these references, but, if I understand it correctly, in sixty of these cases there was also chylothorax. Seventeen of the 176 cases were due to carcinoma of the stomach, and in three of these seventeen, the chylous fluid was found in the thorax as well as in the abdomen. Outland and Clendening collected reports of eleven more cases, of which one was due to malignant cysts in the pelvis and one to Hodgkin's disease. The others are ascribed to trauma, cirrhosis of the liver, appendicitis, nephritis, tuberculous peritonitis and heart and liver diseases.

Tuley and Graves report a case of chylothorax, chylous ascites and lymphosarcoma. They quote Sale[4] as reviewing forty-two cases. The causes of these cases were given as new growths or tuberculous lymph glands in nine cases, thrombosis of the left subclavian vein, four cases, and secondary growths in the thoracic duct itself, nine cases. Other causes given were perforating lymphangitis, aneurysm of the duct itself, thrombosis of the duct, operation for removal of cervical glands, mitral disease, filariae, and inflammatory thickening of the mesentery.

I have not made a thorough review of the literature, but I have found the following articles since the publication of the two articles to which I have just referred. Lewin[5] reported a case of chylothorax due to lymphosarcoma of the mesentery with metastases in various glands and in the thoracic duct. A case of traumatic chylothorax was reported by Derganz[6] in 1915. Pisek[7] reported a case of chylothorax in an infant aged about 2 months. The milky fluid was found on aspiration, and the infant recovered. Bonorino Udaondo and Castex[8] reported five cases of milky ascites, some due to cancer of the stomach, and others to tuberculous peritonitis or other chronic processes.

It seems that malignant disease can be given as the cause of this condition in at least 10 per cent. of the cases. Outland and Clendening were unable to find the thoracic duct in their case, and they are inclined to doubt the reports in which it is said to have been found dilated. In our own case, there was no difficulty in demonstrating the dilated duct.

1. Outland, J. H., and Clendening, Logan: Chylous Ascites, J. A. M. A. **66**: 1833 (June 10) 1916.
2. Tuley, H. E., and Graves, Stuart: Chylothorax, Chylous Ascites and Lymphosarcoma, J. A. M. A. **66**: 1844 (June 10) 1916.
3. Wallis, R. L. M., and Schölberg, H. G.: Quart. J. Med. **3**: 301, 1909-1910; **4**: 153, 1910-1911.
4. Sale, L.: Interstate M. J. **20**: 50 (Jan.) 1912.
5. Lewin, P.: Am. J. M. Sc. **152**: 71 (July) 1916.
6. Derganz, F.: Wien. klin. Wchnschr. **28**: 1320 (Dec. 2) 1915.
7. Pisek, G. R.: Chylothorax in an Infant, J. A. M. A. **69**: 310 (July 28) 1917.
8. Bonorino Udaondo, C., and Castex, M. R.: Rev. Assn. méd. argent. **26**: 58 (Jan.-Feb.) 1917.

SUMMARY

In a case of chylous ascites in a man, aged 72, the feature of special interest clinically was the appearance of enlarged glands in the left side of the neck a few weeks before death. Necropsy revealed milky fluid in the abdominal cavity, cancer of the stomach and metastases in the liver, lungs, mediastinal glands and the glands in the left side of the neck. The thoracic duct was dilated. Of the cases which have been reported with chylous fluid either in the thorax or abdominal cavity, or both, at least 10 per cent. have been due to malignant disease.

POLYPOID ADENOMA OF THE STOMACH

REMOVAL BY GASTROTOMY

EMIL NOVAK, M.D.
Instructor in Clinical Gynecology, Johns Hopkins University Medical Department
BALTIMORE

The frequency of cancer of the stomach is so very much greater than that of other gastric tumors that the benign neoplasms of this origin receive little attention in the diagnostic consideration of doubtful cases. Aside from their rarity, the accurate diagnosis of these benign tumors is rarely possible. Textbooks on medicine, and even the special works on diseases of the stomach, as a rule give scant attention to this group of tumors. Perhaps the most interesting neoplasms of this type are the adenomas.

The first undoubted case of adenoma of the stomach was that reported by Cruveilhier,[1] although earlier description of somewhat doubtful cases had been given by Morgagni and Lieutaud. Brissaud's excellent study[2] was based on the specimen from the case reported by Cruveilhier, which is preserved in the Dupuytren museum. One of the best modern articles on the subject is that of Menetrier.[3] Among other excellent contributions are those of Hayem,[4] Verse,[5] Michel,[6] Napp,[7] Finney and Friedenwald,[8] and Hauser.[9]

TYPES OF GASTRIC ADENOMA

A number of types of gastric adenoma have been described. Three groups may be recognized:

1. Polypoid adenoma, either single or multiple (*les polyadénomes polypeux*). In this type, the interior of the stomach presents one or more polypoid growths springing from the mucosa. As many as 300 have been reported in one case.

2. The so-called polyadenoma *en nappe* of Menetrier. This is characterized by involvement of large areas of stomach wall, measuring perhaps as much as

1. Cruveilhier: Traité d'anatomie pathologique, 1849, Tome 2, Livraison 30, p. 2.
2. Brissaud: Arch. gén de méd. **2**: 257, 1885.
3. Menetrier: Arch. f. Physiol., 1888.
4. Hayem: Presse méd. **2**: 53, 1897.
5. Verse: Arb. a. d. path. Inst. zu Leipzig, 1908.
6. Michel: Thèse de Montpellier, 1907.
7. Napp: Inaug. Diss., Freiburg, 1900.
8. Finney, J. M. T., and Friedenwald, J.: Am. J. M. Sc. **154**: 683 (Nov.) 1917.
9. Hauser: Deutsch. Arch. f. klin. Med. **55**: 429, 1895.

10 or 12 cm. in diameter. In this way large plaques are produced, rather than isolated polypoid outgrowths.

3. The adenoma of the Brunner gland type, which was first described by Hayem in 1897. The point of distinction in this variety is that the gland tissue of the tumor, even though the latter be located in the stomach itself, is of the type of the Brunner glands which are found normally in the duodeum. This is the rarest of the three forms.

ETIOLOGY AND COURSE

Little of a definite nature is known concerning the etiology of this disease. It is, however, commonly believed to be most frequently the result of a chronic gastric catarrh. Napp believes that it is especially apt to be associated with the atrophic forms of chronic gastritis. While adenomas of the stomach may apparently remain for years and may cause no serious symptoms, it is generally conceded that they have a strong tendency to adenocarcinomatous degeneration.

CLINICAL SYMPTOMS

The disease is essentially one of advanced life, most of the reported cases having been observed in persons beyond the age of 50.

Perhaps the most extensive studies of the disease have emanated from pathologic institutes and have been based on specimens found at necropsy in patients who have died of other diseases. This is indicative of the infrequency with which the clinical diagnosis is made, for there are no distinctive symptoms. The usual manifestations of a chronic gastritis may be associated with severe epigastric pain, more particularly in the case of pedunculated growths, which may even cause pyloric obstruction. The specimen in the Dupuytren museum is said by Michel to show a polyp 10 cm. long which had partially traversed the pylorus, which it blocked. In the more marked cases of gastric polyposis, the roentgen ray may be of value in diagnosis.

SINGLE POLYPOID ADENOMA

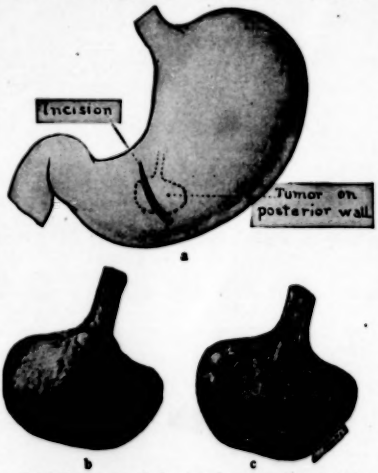
The case which formed the incentive for the present summary was of the type of single polypoid adenoma. The size of tumors of this kind varies between wide limits. The largest one recorded is, no doubt, that of Chaput,[10] which was as large as a fetal head at term. It was pedunculated and its surface showed no ulceration. Although reported as an adenoma, a suspicion is expressed by Hayem and Lion [11] that this tumor was really an epithelioma. There seems to be no special site of predilection of these growths, although they are perphaps more common in the pyloric region. Their consistency is rather firm, the cut surface often being dry and at times almost lardaceous.

10. Chaput: Bull. Soc. anat. de Paris **70**: 534, 1895.
11. Hayem and Lion: Traité de médecine, Brouardel, Gilbert and Thoinot, 1913, p. 413.

Microscopically, these tumors are formed chiefly of the overgrown glandular tissue of the gastric mucosa. The glands themselves are commonly of the pyloric type and are lined by cylindric epithelial cells, which are sharply marked off from the basement membrane. The nuclei are placed close to the latter, and goblet cells are numerous. A greater or less degree of cystic distention of the glands is common, and may be so marked as to give a honeycombed appearance to the cut surface of the tumor. The interglandular substance is a dense connective tissue, often showing moderate round-cell and leukocytic infiltration. The glandular tissue shows no tendency, in benign growths, to penetrate beyond the muscularis mucosae, a point emphasized by Napp.

SURGERY

Little need be said concerning the surgery of these growths in the rare instances in which they are discovered, for the surgery involved in their removal is in itself comparatively simple. In Chaput's case, already referred to, the large tumor which was found was removed by gastrotomy, as was done in the case of the much smaller growth in my own patient, as is described below. The same procedure was carried out in the case of Gibson [12] and also in that of Blake.[13] Both of these resembled my own in every way, so far as may be judged from the very brief and incomplete reports made in the course of a discussion at a meeting of the New York Surgical Society. The case of Lange, referred to by Hayem and Lion,[11] was one of the *en nappe* type, necessitating partial gastrotomy. These cases were all successful.



Polypoid adenoma of the stomach: *a*, tumor on posterior wall of stomach, and incision for its removal; *b*, gross appearance of tumor, with pedicle; *c*, cut surface of growth, showing cystlike gland spaces.

REPORT OF CASE

History.—E. B., a married woman, aged 45, seen in consultation with Dr. Benjamin O. McCleary, August 10, with nothing of significance in her family history, having enjoyed good health up to about four or five years before with the exception of infrequent attacks of tonsillitis, for the past four or five years had suffered with a gnawing pain in the epigastrium, occurring, usually, immediately after eating. There was also a great deal of eructation, but no vomiting.

Seven weeks before I saw her, the patient had been taken with a severe attack of pain in the right hypochondrium, associated with marked tenderness and some rigidity over this region. Morphin was necessary to control this pain, which Dr. McCleary felt was due to a cholecystitis. This attack had lasted for a number of hours and then subsided. Since then, the patient had continued to suffer with stomach symptoms, as noted above. The day that Dr. McCleary and I saw her she had suffered, early in the morning, an attack almost exactly similar to the one just described. The general condition was good, although there was some tendency to prostration. Vomiting had occurred once or twice. The pain over the gallbladder region was described as agonizing,

12. Gibson, C. L.: Ann. Surg. **45**: 130, 1907.
13. Blake, J. A.: Ann. Surg. **45**: 1, 130, 1907.

and tenderness was definitely localized over this point. I concurred with Dr. McCleary in the diagnosis of cholecystitis and advised operation.

Operation and Results.—Aug. 14, 1919, the usual right rectus incision was made over the gallbladder. The gallbladder was found to be tightly distended and very thick walled. It did not, however, contain stones. Before the gallbladder was opened, it was considered advisable to explore the stomach and duodenum. There was no induration or other evidence of ulcer in either the pylorus or duodenum. Within the cavity of the stomach, however, some distance from the pylorus, could be felt a hard globular mass, about the size of a small walnut, which could be moved about very freely. Careful palpation revealed what seemed to be a thin, cordlike pedicle. The stomach was opened, as indicated at *a* in the accompanying illustration, and the tumor easily delivered into the incision. It was about 3 cm. in diameter and was attached by a pedicle 2 cm. long and about 0.5 cm. wide to a point on the posterior wall just below the lesser curvature of the stomach, somewhat closer to the pyloric than to the cardiac orifice (*ø*). The tumor was removed by ligation of its pedicle and severing with the electrocautery. The gallbladder, being obviously diseased, was drained in the usual manner.

The patient made an uninterrupted recovery and is now enjoying good health.

Pathologic Report.—The tumor was almost globular in shape, measuring about 3 cm. in diameter, the attached pedicle being 2 cm. in length and about 0.5 cm. in diameter. The surface showed a slight tendency to lobulation in places (*b*). For the most part it was quite smooth, although there were several small areas of erosion. The tumor, on being cut into, was found to be quite dense and dry, being apparently made up, for the most part, of connective tissue. The latter, however, was studded with numerous cystlike spaces, evidently dilated glands of varying size. This is well shown at *c*. The gland tissue had no tendency to extend beyond the muscularis mucosae.

Microscopically, the lining epithelium was found to be of the usual columnar type, containing many goblet cells. In many places, however, it was eroded. Beneath the epithelial surface, and especially in the areas of erosion, there was marked injection of the blood vessels, with marked infiltration of leukocytes and small round cells. The gland tissue beneath the surface was arranged rather irregularly. In places the gland acini were rather closely packed, their outline being regular and the lining epithelium being similar to that found on the surface. Between the glands in these areas there was also much inflammatory infiltration. In other parts the glands were enormously dilated, forming cysts of considerable size, the largest being about 1 cm. In no part of the tumor was there any transformation of the epithelium which might suggest malignancy, nor was the gland pattern malignant in type. The tumor was apparently a benign pedunculated adenoma.

26 East Preston Street.

Factors Essential to Recovery from Tuberculosis.—Two things more frequently than any others work against the recovery of persons who have tuberculosis. One is that in so many cases of tuberculosis the true nature of the disease is not recognized while it is in the early stage, when it is much more easily cured than it would be later. The other is that many persons refuse to believe that they have tuberculosis until the evidence is so plain that the diagnosis of the physician is no longer needed.—*Bull. Maine State Dept. of Health*, October, 1919.

POLYDACTYLISM AND THE PHENOMENON OF REGENERATION

GEORGE F. ARPS, PH.D.
COLUMBUS, OHIO

Cases of polydactylism have been recorded since early times. Annandale [1] sees in Chaldean illustrations evidences of cases of supernumerary digits. Illustrations of double hands on each arm may find their origin in genuine cases of polydactylism. Beginning with the seventeenth century on down to the present, more or less authoritative cases multiply the records.

Many of the recorded cases [1] are extremely interesting. Forster sketches a hand with nine fingers and a foot with nine toes. Voight records an instance of thirteen fingers on each hand and twelve toes on each foot, making a total of fifty digits. Saviard, in 1687, reported the case of an infant with forty digits, ten to each member. It is not evident from the reports whether or not, in any of the foregoing, the extra digits constituted well developed organs. Meckel, however, offers a case in which a man possessed twelve fully developed fingers and toes. Scherer records the case of a girl baby, normally formed, with seven fingers on each hand, all united and bearing clawlike nails. On each foot there was a double hallux and five other digits, some of which were webbed.

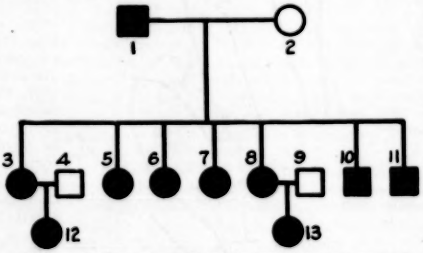


Fig. 1. Pedigree of polydactylism; Shaded symbols represent affected persons; surplusage of digits limited to the hands, and never more than one extra digit on each.

HEREDITARY CHARACTER

According to Davenport [2] polydactyl traits appear to be inherited in nearly typical fashion, as indicated by the pedigree of a family cited by Lucas. Reaumer traces the influence of heredity in the Kelleia family of Malta through five generations. The trait is especially persistent in consanguineous marriages, illustrated by the family of Foldi in an Arabian tribe. In this stock, all acknowledged offspring possess twenty-four digits. An infant born with the normal number of digits is recognized as a product of adultery and is immediately sacrificed. The inhabitants of the village of Eycaux, France, have similarly perpetuated the anomaly in that the village was isolated by its inaccessible location in a mountainous region.

This anomalous phenomenon is not confined to man alone; apes, dogs, fowls and other lower animals possess it. The reported cloven-hoofed horses of Alexander and Caesar are suggestive cases of this trait.

REPORT OF CASE

History.—An Alabama negro boy, aged nearly 21, who, up to the time of his induction into the service of the army, had been employed as a section hand, attracted the attention of the psychologists at Camp Sherman because of his failure to negotiate successfully the Beta examination (for illiterates). The presence of the supernumerary digits was detected during the progress of a special individual examination.

1. Gould, G. M., and Pyle, W. L.: Anomalies and Curiosities of Medicine, Philadelphia, W. B. Saunders, 1897.
2. Davenport, C. B.: Heredity in Relation to Eugenics, New York, Henry Holt & Co., 1915.

A rather small but well-formed sixth digit was found on each hand at the knuckle of the little finger. Both digits were attached at the sides in the same relative position, the upper part of the attachment being on a level with the joint, while the lower point of attachment was about 1 inch distant, along the outer edge of the metacarpal bone. The two digits were exactly the same size and were identical in all other particulars. There was no bone and a very low degree of sensitivity. They were incapable of voluntary movements. Markings peculiar to the last phalangeal point were present, as were also small finger nails proportionate to the size of the digits. In all of these respects the two digits were symmetrical throughout. The identity was unvarying as to skin color and contour.

Family History.—The determiners of the polydactyl trait were not carried on the maternal side; the subject remembered seeing the deformity definitely only in the case of his father, his brothers, sisters and the children of his oldest and youngest sisters. He was very certain of these three generations, and appeared to remember having seen these "rooster's spurs" on his grandfather and one of his uncles. Two brothers, five sisters and two children of two of the sisters continue the peculiarity; eleven descendants, including the father and himself, carry the determiners of this trait.

Regeneration.—The subject reported that his father had the supernumerary digits removed, and that since then it has been necessary to trim them off, as they grow continuously. This fact is strongly indicative of the phenomenon of regeneration of parts, characteristic of lower forms of life—the regeneration of a lost leg in a crab, for example. We may find here some support for the view that in the fertilized ovum is found an aggregation of diversified materials known as formative stuffs, each of which is deterministically specific in the direction of structure. Speculation as to the bearing of this phenomenon on the theory of epigenesis versus that of evolution is left to the cell specialist for indulgence. Whether the entire digit would be regenerated if permitted to grow is, so far as I am aware, unknown.[3]

Health History of the Subject.—He reported that he had had but few of the diseases of childhood. He confessed promiscuity and acknowledged having had gonorrhea and bubo, once each. He was not a drug addict, nor did he use tobacco or alcohol. There were present prognathism, receding forehead and narrow skull usually found in the negro; but no unusual stigmas were found save the existence of supernumerary digits.

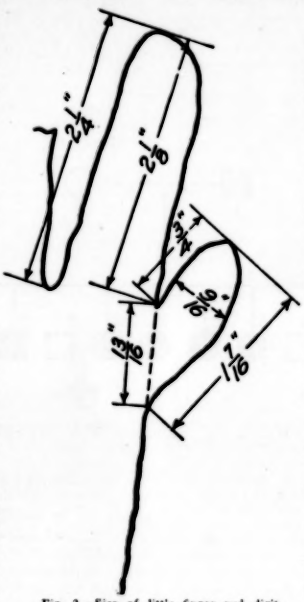


Fig. 2.—Size of little finger and digit, relative position of supernumerary digit, and place of attachment; left hand, palm upturned.

Mental Ratings of the Subject.—The range of information of the subject was extremely limited, since he had never attended school and could neither read nor write. Mental ratings were obtained by means of the short performance scale and the short Yerkes-Bridges point scale. In the former examination the subject did well in the ship, manikin and feature profile tests, fairly well in the digit symbol test and on the mazes, but very poorly in the remainder of the examination. The result obtained by the short point scale method are regarded as the more reliable, and these indicate a mental age of 10.3 years.

The subject of this report was recommended for general military service.

3. Unfortunately I was unable to confirm by direct observation the reported phenomenon, which, if correct, is most unusual and must be regarded with extreme skepticism unless confirmed by other investigators.

FOCAL INFECTION AND ITS RELATION TO OBSTETRICS

JOHN E. TALBOT, M.D.
WORCESTER, MASS.

Given a focus of infection in a pregnant woman, there are certain well-known possibilities. A focus of infection means a colony of pathogenic bacteria within the tissues of the body in the process of active multiplication. This colony of bacteria is kept alive by the destruction or digestion of the neighboring tissues of the body, and there is a by-product of this growth known as bacterial toxin which is known to be antagonistic to the proper functioning of the body cells. Any such colony may be the point from which bacteria may migrate into the blood stream and thus be scattered to different parts of the body, to cause disease in organs remote from the original focus. It is generally believed that such migration is of only occasional occurrence, whereas the absorption of the bacterial toxins into the blood stream is to a certain degree always present. I do not believe that focal infection is the only etiologic factor in the several complications of pregnancy which are here discussed. It does, however, have a tremendous influence on obstetrics; many complications, hitherto obscure as to etiology, can be attributed to the presence of a focus of infection. From a prophylactic standpoint, every obstetrician should study his patients to ascertain whether any such focus is present, and have it removed before it does harm.

The reader should interpret the term "focus of infection" as meaning exactly what it says, regardless of the location. I emphasize the teeth simply because I believe that they harbor these foci more commonly than do the tonsils, sinuses, ears, etc., and that they are actually of greater potential danger than the others. The roentgen ray has demonstrated that a high percentage of "saved teeth" have abscess formation at the ends of the roots. An abscess at the end of a crowned or pivot tooth is a different thing from a decayed tooth. In the first case the abscess must necessarily drain into the blood stream; in a decayed tooth there may be some drainage into the mouth and some into the blood stream. The former is therefore the more dangerous.

My subject naturally divides itself into two parts: (1) those complications which may be the result of a temporary bacteremia or septic embolus, and (2) those complications which may be the result of the presence of the toxins of chronic sepsis in the blood of a pregnant woman.

BREAST ABSCESS

It is impossible to produce conclusive evidence that any given breast abscess was due to a septic embolus

which had freed itself from a focus of infection elsewhere. However, it has undoubtedly been a common experience of many to observe a breast abscess develop most mysteriously without sore or cracked nipples and in the presence of painstaking care of the nipples. In one patient [1] a breast abscess developed fourteen days after delivery, although the baby died, and the breasts, which had not been used, had had careful treatment. In this case and in others I have been able to demonstrate a focus of infection elsewhere.

Breast abscess is much less common than that syndrome of symptoms classified as plugged duct or threatened breast abscess. It has been my experience to find most of these cases associated with a demonstrable focus of infection. I believe that they are for the most part actual infectious processes, and that the term "threatened abscess" is the correct one.

When we take into consideration how frequently the mother's milk becomes affected, with resulting illness of the baby due to these threatened abscesses, we must realize the far-reaching effect of an infected tooth, which may be the cause of illness in the baby through lack of proper breast milk or through nursing milk with bacteria contained therein.

I was called to see a breast-fed baby which was not gaining properly, crying a great deal, and showing little pustules on its head and body. I found that the mother had had two recent attacks of "threatened breast abscess." A roentgen-ray examination of the teeth revealed several apical abscesses. The milk remained so poor that I was forced to have the baby weaned.

Pyelitis is another complication of pregnancy which can frequently arise from a focus of infection. That pyelitis is known to be a more frequent complication of pregnancy than formerly can well be explained on the recent increase in the number of undrained foci of infection which have resulted from dental practices.

Certain obstetric patients, few in number, to be sure, have been known to die of puerperal sepsis in spite of careful aseptic treatment.[2] The causation has always remained a mystery; but if a focus of infection can be demonstrated in such a case, would it not be more reasonable to regard this as the cause than to assume that bacteria in the vagina should suddenly assume virulence sufficient to be fatal?

Women have died of pulmonary embolus before delivery. Thrombus formation implies infection in or around a blood vessel. If this occurs in an otherwise apparently healthy person, where does the infection enter? With a focus of infection demonstrable it is apparent that, on the principle of a temporary pyemia, it may be the primary cause.

One principle which may have a bearing has been established: bacteria injected into the blood stream of an animal, otherwise aseptically wounded, have a tendency to appear in and infect the aseptic wound or weakened part. It is also true that tissue in the process of production has a weak resistance to infection. If, therefore, bacteria in the blood stream reach the placenta, it is not improbable that they may cause inflammation in the villous membrane. The sluggishness of the blood stream at this point is a factor which tends to improve the opportunity for such a process.

1. Talbot, J. E.: A Theory on the Etiology of Toxemia of Pregnancy With or Without Convulsions, Surg. Gynec. & Obst. **28**: 165-174 (Feb.) 1919.

2. The Prevention of Puerperal Sepsis, editorial, Boston M. & S. J. **179**: 104 (July 18) 1918.

It is my belief that a very large proportion of the uninduced miscarriages are due primarily to this cause. If the inflammation is sufficient in amount, it would result in rupture of the villous membrane with the formation of a hematoma, which in time may separate the placental tissue from the uterine surface sufficiently to cause internal, concealed hemorrhage or external hemorrhage, according to the location of the inflammatory process in the placenta.

Threatened miscarriage may be the result, or, if the hemorrhage is sufficient to terminate the pregnancy, a miscarriage is the result. I have been able to demonstrate foci of infection in a high percentage of those cases of miscarriage which have been in my charge.

So far as recent teaching has gone, *Spirochaeta pallida* has been granted the exclusive privilege of passing the villous membrane and infecting the fetus. Syphilis has stood out as the one disease which is clearly inheritable, the fetus actually containing the active infective agent. Why should the spirochete enjoy this exclusive privilege? There is evidence accumulating that this is not so, however, and once it is proved that other bacteria pass the villous membrane, then a focus of infection capable of throwing bacteria into the maternal blood stream becomes a danger and a menace to the life and welfare of the fetus.

Hydramnios, so frequently associated with the malformed and macerated fetus and with toxemia of pregnancy, is probably a secondary result of the same infective process.

Nearly every baby which in my experience has developed hemorrhage of the new-born has come from a mother in whom I have been able to demonstrate foci of infection in the teeth; and a high percentage of such mothers have shown some signs of toxemia during their pregnancy.

Pustular eruptions are fairly frequent in children not more than 48 hours old. Such cases of this as have come under my observation have been associated with foci of infection in the mother. Likewise, pustular eruptions are not infrequent sequelae to threatened breast abscesses.

If it can be proved, therefore, that the bacteremia originating from a focus of infection can result in inflammation of the placental tissue or villous membrane, a great many of the tragedies of obstetrics, hitherto unexplainable, can be given a reasonable etiology.

COMPLICATIONS OF PREGNANCY FROM TOXINS OF CHRONIC SEPSIS

Every focus of active bacteria within the body produces a by-product—toxin—which, in sufficient concentration is antagonistic to the proper functioning of the body cells. Disease is the outward manifestation of the effects of this toxin in the body.

The fact that a few days elapse before symptoms become apparent following infection is proof that toxins in lesser degrees of concentration are present in the system, doing damage gradually, and that the symptoms which declare the disease may be said to be the cumulative effect of low concentration of toxin, or the effect of the increase in the amounts of toxin to the point of causing symptoms. It must be a fact that these toxins in lesser degrees of concentration are injurious and will produce results in time, just as the lesser degrees of lead poisoning produce symptoms after the lapse of time.

It would be a reasonable conclusion, therefore, that any focus of chronic sepsis must be a hindrance in some degree to the proper functioning of the body processes. By taking up those symptoms which manifest themselves as the result of high concentrations of bacterial toxin in the blood and working backward, we may thereby pick out those organs of the body which are undergoing damage during the prodromal stage of a disease. The situation is probably similar to the wear on the bearing of a machine. The signs of this wear do not appear until there is sufficient injury to cause wobbling or a break in the bearing. It is fair to assume, therefore, that if the kidney or the liver are the usual organs injured in a given disease, these organs are without doubt hindered in their proper functioning by these toxins when in low concentrations.

The fact that the urine of a severely sick person shows evidence of acute kidney irritation suggests that toxins of various types are damaging the kidney parenchyma. It is equally true that certain bacteria have a special tendency to cause damage to the kidney—witness the frequency with which scarlet fever is followed by kidney injury. This injury is generally not an immediate result, but a late result of the disease. In our endeavor to find the primary cause of the kidney inefficiency in toxemia of pregnancy and eclampsia, it seems significant that a streptococcus is so frequently associated with the scarlet fever lesions in the throat, and that the streptococcus is perhaps the most common type of bacteria in tooth root abscesses and chronic tonsillar abscesses.

Dr. James L. Huntington [3] has reported the case of a primipara who on her first visit showed a blood pressure of 150, which returned to normal only to rise again three months later. This rise was soon followed by a severe attack of abdominal pain and the appearance of jaundice and blindness. This was followed by external hemorrhage. The systolic blood pressure was 170. The diagnosis of detached placenta was made and verified by an abdominal operation, at which time a cesarean section was performed. A catheter specimen of urine showed a large trace of albumin. Forty-eight hours after the operation the patient died, a temperature of 103 occurring within twenty-four hours after the operation. The liver showed much destruction, and a streptococcus was recovered from the peritoneal fluid.

If this patient had recovered, the case would have passed as a severe toxemia of pregnancy accompanied by complete detachment of the placenta. The rise of temperature so soon after operation suggests strongly that the source of infection, which turned out to be a streptococcus, was in the system before the operation. I believe it was the activity of this streptococcus which was the cause of the condition. The elevation of the blood pressure three months before probably denoted the activity of this bacterium in some undetermined focus of infection. In such a case we are dealing with the fulminating type, the ordinary case of toxemia being of the same nature but of lesser degree of intensity.

La Vake,[4] who believes in the infectious basis of toxemia of pregnancy and eclampsia, quotes the work of Warnekros, who obtained eighteen positive blood cultures out of twenty-five taken antepartum in toxemia cases. The streptococcus group is prominent in the kinds of bacteria recovered by him. This evidence forms a basis for my belief that some of the bacteria of the streptococcus group may have a specific power to injure the kidney function and kidney parenchyma.

The metabolic processes of a pregnant woman are much in excess of the normal. This increase in activity must incur a corresponding increase in the metabolic waste products that must be excreted. In order to prevent a backing up of these waste products in the system, the kidney reserve power must be called into play. If, however, the kidney function is hindered by the presence of the toxins of chronic sepsis in the blood stream, it is reasonable to assume that there may be a time when the hindering effect of these toxins may be sufficient to cause a failure on the part of the kidneys to eliminate properly the increasing amount of waste products from the developing pregnancy. We are, therefore, in a situation similar to that of a city with the outlet of the sewer partially plugged. The remaining outlet might be sufficient to take care of the sewage of the city, if it were not a growing city; but the increase in the amount of sewage to be removed soon overwhelms the impeded outlet until there is backing up, with resulting damage coming, not from the reduced outlet, but from the unremoved sewage itself. We do not have to assume any special poison resulting from the developing pregnancy, for we know that excretory products retained in the system are injurious to that system. The symptoms which go to make up the disease of toxemia of pregnancy are, I believe, due to the retained waste products of the normal physiologic metabolism. The reported work of Slemons [5] shows, likewise, a retention of nitrogenous waste products in the blood of toxemic and eclamptic patients.

That a large proportion of uninduced miscarriages are due primarily to foci of infection is shown: first, by the frequency with which miscarriage appears in the obstetric history of toxic or eclamptic patients; secondly, by the frequency with which antepartum hemorrhage, by which I mean hemorrhage coming on after conception, is associated with toxemic or eclamptic patients, and thirdly, by the frequency with which infarcts in the placenta are found on the edge of the placenta, frequently showing an indentation in the circular outline of the placenta which strongly suggests an injury at that point which stopped the growth of the placenta in that direction.

These three observations can be successfully correlated if we assume that there is a primary focus of infection in the system. If the infarct can be interpreted as a point of damaged placenta with nature's healing process superimposed, and if we assume that that damage was primarily caused either by the lodgment of a small embolus of bacteria or by the toxins of sepsis in the blood stream, it is not at all difficult to understand why these three observations are associated. It is also plain that it is not impossible to have miscarriages, antepartum hemorrhage and infarcts in the placenta without other toxic symptoms.

Suppose that there is a septic embolus in the blood stream of the pregnant woman, and that this embolus reaches the placenta. The sluggishness of the blood stream in this organ would improve its opportunity

3. Huntington, J. L.: Certain Causes of Bleeding During Pregnancy: Their Significance and Treatment, Interstate M. J. 24: 1161 (Dec.) 1917.

4. La Vake, R. T.: Infectious Theory of Preeclamptic Toxemia and Eclampsia, Journal-Lancet 36: 600 (Oct. 15) 1916.

5. Slemons, J. M.: Analysis of the Blood in Eclampsia and Allied Intoxications, Am. J. Obst. 77: 797 (May) 1918.

for finding lodgment in the villous membranes. This inflammatory process, if located near the edge of the placenta, would cause swelling and local thrombosis in the placental tissue. If this swelling is sufficient, it is possible that there may result a local hematoma, which is in reality a small area of internal, concealed hemorrhage. Should this hematoma be large enough to cause a rupture between the edge of the placenta and the uterus, there would be an external hemorrhage which would make its appearance in the vagina only when it was sufficient to dissect its way downward between the chorion and the uterine wall to the external os. Thus, we might have numerous infarcts formed without any external hemorrhage. Likewise, we might have numerous infarcts formed without any accompanying evidence of toxemia of pregnancy.

If this injury to the placenta is in the middle of the placenta, an infarct may form without symptoms unless the injury is sufficient to dissect sufficient of the placental tissue to terminate the life of the fetus. In such a case the miscarriage may not result for weeks after the injury.

The following case is an example of this kind:

A woman, aged 39, who had a bad upper left wisdom tooth and several devitalized teeth, had been pregnant three times. The first pregnancy went to full term and was said to be associated with uremic poisoning and the puerperium complicated by pyelitis. The second pregnancy resulted in a miscarriage at two months associated with edema. The third pregnancy resulted in a miscarriage at five months, followed by several months of anemia.

A fourth pregnancy resulted in a miscarriage at four months. Before this miscarriage occurred she reported to me that she had had a sudden onset of severe pain in the right lower quadrant which had lasted about three days, but was almost gone at the time she reported to me. No further symptoms occurred until she began to bleed profusely, one month later. The vagina was packed and the patient taken to the hospital. When the pack was removed, the placenta came away with the membranes intact. The whole center of the placenta was destroyed and showed signs of old hemorrhage.

The pain which the patient experienced the month before was probably caused by an area of internal concealed hemorrhage in the middle of the placenta. This patient had what was in all probability a toxemia with her first baby; none of her subsequent pregnancies have been sufficiently long to develop real toxemic signs. This case also represents an example of the association of miscarriage with toxemia of pregnancy.

Antepartum hemorrhage due to premature detachment, partial or complete, has long been recognized as a common accompaniment of toxemia of pregnancy. I believe that this phenomenon is due primarily to an injury done the placenta either by a local infectious process or by the toxins of sepsis in the blood stream, followed by a hematoma which may dissect the whole or a part of the placenta away from the uterine surface. Dr. Huntington's case, cited above, is a good example of this in its worst form.

A case recently reported by Cornell and Earle [6] of Chicago demonstrates exactly this modus operandi of a miscarriage:

A multipara, aged 36, in her sixth pregnancy had some bleeding at the end of the second month. An examination gave reason to believe that an extra-uterine pregnancy was present. Accordingly, the abdomen was opened and it was found that the patient had a bicornate uterus; in the right horn was a fibroid, in the left, a pregnancy. It was decided that hysterectomy was the best procedure, and the specimen was removed in toto.

This set of circumstances, that is, the removal of a uterus following so closely on a threatened miscarriage, is therefore exactly what could be desired in order to get a proper examination of the placental tissue following this threatened miscarriage.

The pathologic report is most complete:

The only abnormal feature of this placenta is the abundance of necrotic areas in the decidua adjoining the intervillous space. The margin of these areas is densely infiltrated with leukocytes. . . . They show profound necrosis centrally, there may be some hemorrhage, and there is always a margin densely infiltrated with polymorphonuclear leukocytes. . . . One small area . . . showed . . . a villous with edematous stroma. These observations point to a beginning abscess formation with spreading of the infection to the ovum. Slides stained with Gram's stain afford some inconclusive evidence of the presence of gram-positive cocci, but the histological appearance of the necrotic areas points clearly to their infectious origin.

Where did this infection come from? Besides mentioning that the patient had very bad teeth and some enlarged cervical lymph glands, the report tells of an acute infection, a "cold," which had lasted three weeks, and that the bleeding followed soon after this infection. The enlarged lymph glands in the neck might have become enlarged as a result of infection either in the teeth or in the tonsil. In all probability it was the infection in the tonsil which was the focus which threw off bacteria into the blood stream. I do not believe that the bad teeth can be thrown out of this case as a possible source of infection, unless the patient had other evidence of chronic disease of the tonsils. In her history she has stated that her first bady died of vomiting blood and her third pregnancy was a miscarriage. I would, therefore, read into her history a story of chronic infection either in her tonsil or in her teeth, antedating her first pregnancy. The incidence of a hemorrhagic baby associated with a later miscarriage, when viewed from the light of other experiences, forms an entity which justifies this supposition. If this is the true explanation of partial or complete detachment of the placenta, there is no reason for seeking another to explain the miscarriages which so frequently occur in the history of toxemic patients, or in patients who have a miscarriage without a demonstrable cause.

The three cases of pernicious vomiting of pregnancy which have come under my observation during my service at Memorial Hospital were so striking that I have classified this complication of pregnancy among the others attributed to the effects of chronic sepsis. In two of the cases observed, the mouth was full of carious teeth, the gums markedly inflamed and full of pus.

In one of these cases, twelve extractions of those teeth which were flush with the gums were made in the hope that the supply of toxins might be decreased sufficiently to improve the condition. In forty-eight hours the pulse had risen from 100 to 120 without marked improvement in the vomiting, and it was compulsory to terminate the two and a half months' pregnancy.

In the second case the patient was in extreme emaciation, having been sick for six weeks before entering the hospital. A five months' pregnancy was terminated and a macerated

6. Cornell, E. L., and Earle, W. C.: Uterus Bicornis Unicollis with Two Ova Implanted in One Horn and a Fibroid in the Other, Surg., Gynec. & Obst. 29: 485 (Nov.) 1919.

fetus removed. As in the other case, the mouth was a mass of infection. On discharge, recommendation was made that these teeth be extracted. However, this was not carried out, and about one year later the patient appeared at the hospital again and had to be curetted for an incompleted miscarriage.

The third patient appeared at the hospital on account of severe vomiting at the second month of pregnancy. The case had previously been diagnosed as tuberculous kidney after catheterization of the ureters six months before the patient became pregnant. Abortion was recommended and performed in this case.

In a recent article, Dr. Eugene S. Talbot [7] says:

The number of focal infections and disturbances from faulty root fillings, local and systemic, is appalling. The average dentist, not being grounded in pathology, does not and cannot appreciate the seriousness of his faulty treatment. A different method of root filling must be immediately instituted or devitalized teeth must be extracted. A rule which I have adopted is that a patient's health is worth more than all the natural teeth.

From time to time, in the past thirty years, I have repeatedly called the attention of the profession to the fact that modern dentistry is producing more disease than any other one cause. The profession is beginning to realize the truth of this statement. Since the first dental college was established, there has gradually developed a method of practice of mechanics regardless of pathologic results. The method of practice, at best, has benefited the individual patient only for the time being. . . . Since our present methods of procedure are faulty, we must resort to radical changes in treatment and devote our entire attention to preventive measures.

CONCLUSION

One needs to be a believer in only a part of the statements made to be impressed with the seriousness of the situation and with the need for the removal of all known foci of infection when associated with pregnancy.

28 Pleasant Street.

TREATMENT OF DENERVATED MUSCLE *

FRANK A. HARTMAN, PH.D.
Professor of Physiology, University of Buffalo Department of Medicine
BUFFALO
AND
W. E. BLATZ, M.A.
TORONTO

In 1841, Reid [1] advanced the theory that the atrophy of denervated muscle was caused by inactivity. He found that in the frog, a denervated muscle that was exercised daily by galvanic stimulation did not lose weight. Untreated muscles were thought to decrease one half, but it is now known that frog's muscle does not atrophy nearly so rapidly as Reid believed.

Brown-Séquard,[2] working with rabbits, also came to the conclusion that galvanic stimulation prevented atrophy. The work of these investigators led to a general adoption of the disuse theory. This theory served as a foundation for all later treatment. Massage and passive movements were found to promote circulation in normal muscle, and therefore it was thought that similar treatment would benefit denervated muscle.

At the present time, the generally accepted methods of treatment for denervated muscles are either massage or electrical stimulation. Indeed, until the investigations of Langley and his collaborators, no experimental work seriously questioned the value of massage or electrical treatment in a muscle whose nerves had been destroyed. Although Schiff,[3] from observations which he had made on the tongue and the limb, concluded that fibrillation is a general phenomenon in muscle after nerve section, Langley [4] was the first to suggest that the atrophy is due to continuous fibrillation. Fibrillation begins four or five days after nerve section, and persists until some of the regenerating fibers make connection with the muscle. Such incessant activity might well cause wasting of the muscle. Langley and Kato [5] were able to check fibrillation by the intravenous injection of considerable amounts of calcium chlorid. They demonstrated no change from the feeding of calcium lactate. Ionization with calcium chlorid stopped fibrillation, but produced such trophic changes as to make its use inadvisable.[6]

The time-honored treatment by massage has been studied in a series of researches by Langley and his co-workers.[7] Their method has been to denervate two corresponding muscles in the same animal. After a period of treatment of the muscle on one side, the animal was killed and the corresponding treated and untreated muscles were carefully dissected out and then weighed. In this way, some idea of the relative amount of atrophy could be determined. They had to take into account the variations that might normally occur in the relative weights of the right and left muscles at the beginning. This method, moreover, assumed that the weight was a true measure of the unatrophied muscle because the connective tissue could not be ruled out.

Langley and Hashimoto [8] reach this conclusion:

Reviewing the effect of the various forms of treatment we have tried, there is, we think, only one which gives any hope of considerably reducing the rate of atrophy, viz., ionization with a potassium salt, and that is slender, for an (apparently) positive result was only obtained in one out of three experiments.

The general impression we get from our experiments, and from those made earlier by one of us, is that none of the methods of treatment of denervated muscle now in use—passage of galvanic current, production of contraction, passive movements and massage—can have more than a slight effect in delaying muscle atrophy.

In a recent study,[8] we have investigated the effects of massage on denervated muscle. Instead of depending entirely on the weight for comparison of the treated and untreated muscles, the work capacities were also determined. However, the method then used necessitated a sacrifice of the rabbit at the end of the functional test, since the muscles were dissected out for the purpose. The gastrocnemii were dissected free, with as little disturbance in the circulation as possible, and then with the leg in the foot-down position, the Achilles tendon was fastened to a weight pan while the tibia was clamped. The muscles also were weighed.

There was found to be a considerable discrepancy between the comparison by weight and the comparison

7. Talbot, E. S.: The Higher and Better Education of the Dental Student, J. A. M. A. 73: 805 (Sept. 13) 1919.

* The work here reported was done in the physiology laboratory of the University of Toronto under the auspices of the Research Committee, Medical Services, Department of Militia and Defense, Ottawa, Canada.

1. Reid, John: Edinburgh Month. J. M. Sc., May, 1841.
2. Brown-Séquard: Compt. rend. Soc. de biol., 1841, p. 195.
3. Schiff: Arch. f. physiol. Heilk. 10: 587, 665, 1851.
4. Langley, J. N.: J. Physiol. 50: 337 (July) 1916.
5. Langley, J. N., and Kato, I.: J. Physiol. 49: 417, 1915.
6. Langley and Hashimoto: J. Physiol. 52: 15, 1919.
7. Langley, Kato and Hashimoto (Footnotes 4, 5 and 6).
8. Hartman, Blatz and Kilborn: J. Physiol. 53: 108 (Sept.) 1919.

by function. With the functional test as the method for comparison, the massaged muscles were found to be stronger in 62 per cent. of the animals treated (thirty-seven rabbits). However, in view of our ignorance of the relative capacities of the two sets of muscles before treatment, a small preponderance of power in the treated muscles was considered inconclusive.

Believing that the functional test is a better method for determining the amount of active muscle tissue than that by weight, we have recently devised a method which makes it possible to study the relative strengths of the muscles at frequent intervals in the same rabbit. Thus, in the present research we have studied the effects of massage in sixty rabbits and the effects of galvanic stimulation in twenty-four, in all cases testing the treated and control muscles from every ten to fourteen days.

METHODS

Under anesthesia the flexor muscles below the knee in each hind limb were denervated either by crushing the sciatic nerve with a hemostat whose jaws were ground smooth, or by cutting the sciatic. Before cutting the nerve, a fine (000) catgut suture was passed through it at two points, a few millimeters apart. The nerve was then cut, and the two ends were drawn together by tying the suture. One suture included the two contiguous branches of the sciatic.

In a later series of rabbits in which we wished to delay the suturing, the proximal end was prepared in one of three ways: first, enclosed in a small sterile rubber tube which was doubled back and ligated to the muscle; second, enclosed in a tube which extended along the course of the muscle toward the knee, the tube being long enough to insure carriage of the growing proximal end beyond the peripheral cut end; third, the proximal end reversed and sewed to muscle without a tube.

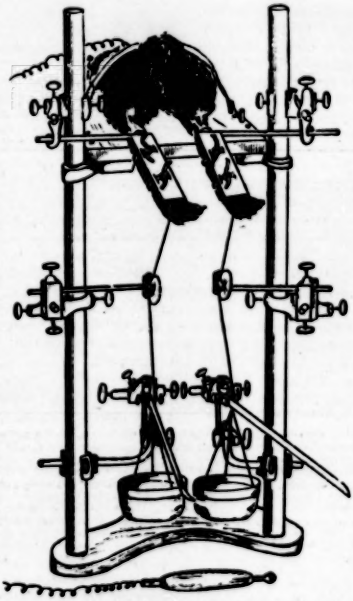


Fig. 1.—Apparatus for comparing the relative power of the muscles in the hind limbs of a rabbit, without dissection.

The gastrocnemius muscle groups were tested on the day following the operation while the animal was lightly anesthetized with ether. The animal was placed in a ventral-side-down position on an animal board, with the hind limbs hanging freely over the end. Both hind feet were tied to aluminum sandals which swung from rigid horizontal rods (Fig. 1). The freely moving end of each sandal was attached by string to a scale pan and lever. The apparatus was so arranged that a record of the contraction could be made on a kymograph. The muscles were caused to contract by a supermaximal galvanic stimulation, the inactive electrode being placed on a moistened shaved area at the midline just in front of the tail, while the active electrode touched as nearly as possible the motor point for the gastrocnemius similarly prepared. A series of contractions at a wide range of loads with supermaximal stimulation (30, 40 or 50 volts) indicated very well the relative strengths of the two muscle groups. The amount of work calculated at the optimum load was used as a basis of comparison for the functional capacity of the muscles. Each rabbit was tested in this way at frequent intervals throughout the course of the experiment.

TREATMENT

Massage.—The right limb of each animal was massaged for a certain period of time each day, varying from two to twenty minutes. Both right and left limbs were given passive movements three times at each treatment to aid in preventing stiffening of the joints. The feet were always encased in aluminum boots.[8] Masseuses from the School of Massage, Hart House, Toronto, gave this treatment.

Galvanism. — A series of twenty-four animals was treated with the galvanic current. This treatment consisted of shocks produced by a metronome connected in the circuit, the aim being to secure a certain magnitude of contraction. This magnitude and the duration of the treatment varied in different rabbits. The contractions were roughly classified into minimal, moderate and vigorous. The duration varied from five to fifteen minutes, but in many cases each alternate minute was allowed for rest. The metronome made and broke the circuit once each second. The voltage ranged from 6 to 30 with 1 to 10 milliamperes of current. A greater voltage was required to produce the same magnitude of contraction as degeneration progressed.

RESULTS AND COMMENT

Both the electrical and the massage series may easily be discussed together, for neither treatment appeared to produce any greater effect than the other. This is easily explained when it is considered that the treated limb on the whole did not appear to be any better off than the control limb.

Within the first month after denervation, there was a very marked drop in the power to respond to galvanic stimulation. This occurred alike in the two limbs.

In addition to the series in which the nerves were crushed or cut and immediately sutured, we have studied a series of forty-one rabbits in which the proximal end of the nerve has not been permitted to unite with the distal end for periods varying from thirty to 100 days. These animals were treated either by massage or by electricity. The treated muscles lost their galvanic response just as quickly as did the controls. Moreover, neither massage nor electricity caused the denervated muscle to recover from the diminished response. Fourteen per cent. of the rabbits did show a slight advantage on the treated side, but it was no more than would be expected from accidental variation.

The recovery in the galvanic response in those animals with crushed or cut and sutured nerves is closely connected with the regeneration of some of the nerve fibers to the stage of union with muscle fibers, because such recovery was shown to be accompanied by reflex control over the muscles. This was determined by holding the rabbit by the ears and exerting sudden upward pressure against the hind feet. In the case of recovery, the animal would offer resistance against this pressure.

There was a very distinct difference in the rate of recovery of both "reflex resistance" and power of galvanic response between denervation produced by crushing the nerve and denervation caused by cutting. In spite of the fact that the cut nerves were immediately joined by suture, the rabbits in which the nerve was crushed almost invariably recovered about two months earlier. Howell and Huber,[9] in two experiments in which they crushed the nerve on one side and cut and sutured the nerve on the other side, found at the end of twenty-one days that the return of irritability was slightly better on the side on which the nerve had been crushed. They attributed the difference to a better coaptation of fibers.

Our observations indicate that coaptation of the nerve fibers is essential to rapid recovery. Moreover, some of our experiments seem to show that coaptation is essential to complete recovery for, whereas the rabbits with crushed nerves regain full power within a few months, those with cut and sutured nerves recover very slowly even after the time when some of the nerve fibers have become united with muscle fibers. In the time limit of our observations, many of the muscles had not regained the full power which they possessed before denervation (Fig. 2).

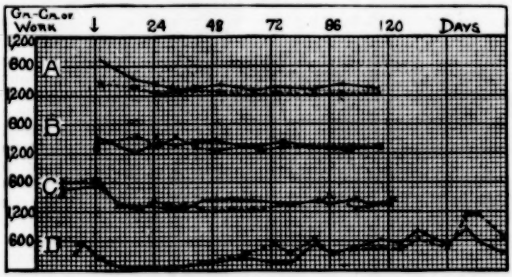


Fig. 2.—Typical curves obtained by plotting the work done at the optimum load in treated and untreated denervated muscle; solid line, treated muscle group; broken line, control group; arrow indicates day on which muscle was denervated; *A*, nerves cut and union with the peripheral end prevented by turning the proximal end aside after capping with a rubber tube; treatment, eight minutes massage, daily; *B*, nerves cut and sutured: treatment, vigorous contractions produced by galvanic shocks every second for ten seconds followed by a rest of ten seconds, the whole being continued for four minutes daily; *C*, nerves cut and sutured: five minutes' massage, daily; *D*, nerves crushed; fifteen minutes' massage, daily. The earlier recovery of the crushed nerve case is to be noted.

Such coaptation as occurs in a crushed nerve is obviously impossible in a cut nerve because there is not the precise chemiotaxis of peripheral over central nerve fibers. This is shown by the groping about of the central fibers, some growing into connective tissue and never succeeding in making connection with muscle fibers, while others find old sheaths, perhaps not their own. Some divide into branches which may eventually reach muscle and thus make up for those which have gone astray.

Again we wish to emphasize the fact that denervated muscle is not a muscle at rest. It is undergoing abnormal changes, of which fibrillation is perhaps only one. Such changes are probably the cause of muscle atrophy, for Langley and Itagaki[10] have shown that there is an increase in the rate of breakdown of the muscle substance.

We have examined the denervated muscles in three rabbits before and after massage periods ranging from five to twenty minutes (the skin always protected the muscle while it was being treated). There was no apparent reduction in the fibrillation. A similar study of fibrillation before and after galvanic stimulation in six rabbits has shown in no instance anything better than a transient reduction.

In the light of our present researches, we believe that massage in denervated muscle is futile. Galvanic treatment likewise appears to produce no beneficial effect.

SUMMARY

The sciatic or tibial nerve was cut or crushed on both sides of 123 rabbits. The denervated muscles on the right side were either massaged (eighty-six cases) or else stimulated by galvanic shocks (thirty-seven cases), daily.

Union of the cut nerve was prevented in forty-one animals, and in the others it was favored by suture or by crushing instead of cutting. The right and left muscle groups were compared from every ten to fourteen days by a determination of their power to do work when stimulated by supermaximal galvanic shocks while the animals were under the influence of ether.

Neither massage nor galvanic stimulation prevented the loss in galvanic response which normally develops a few days after denervation. Treatment likewise did not appear to cause a more rapid recovery of the muscle when the nerves were permitted to grow down to the muscle fibers. Galvanic response and voluntary function in the denervated muscle returned much earlier in crushed nerve cases than in cut and sutured cases.

In all of our work we have been unable to demonstrate benefit from massage or galvanic stimulation.

Torpid Ulcers Heal Under Desiccated Normal Horse Serum.—Local treatment with desiccated normal horse serum for ulcers has been described by Dr. A. Amaral in the *Boletim da Sociedade de Medicina de S. Paulo*, **2**:83, 1919. All the ulcers in thirteen cases described in detail were on the legs. No antiseptics are used, or grafts; the lesion is merely powdered well with the desiccated serum after it has been aseptically cleansed. The application is repeated every second day at first and then every third day. From six to eleven applications usually answered the purpose. By the next day the ulcer is found bathed in a puriform fluid but the micro-organisms grow less and less numerous, and disappear by the sixth to the tenth application. The smooth, nonretracting scar tissue grows on an average 0.003 mm. at each application.

9. Howell, W. H., and Huber, G. C.: J. Physiol. **13**: 361, 1892.
10. Langley, J. N., and Itagaki, M.: J. Physiol. **51**: 202 (July) 1917.

TORSION OF THE OMENTUM

REPORT OF A CASE AND A BRIEF REVIEW OF THE LITERATURE

FRANK BENTON BLOCK, M.D.
AND
HERBERT J. DARMSTADTER, M.D.
PHILADELPHIA

History.—Mrs. B. F., aged 36, admitted to the Jewish Hospital, Sept. 4, 1919, complained of pain in the lower part of the chest and in the epigastrium. She gave a history of a similar attack, but not so severe, five weeks previously. This improved in two days, but tenderness in the abdomen had persisted up to the time of admission. The present pain began on August 28, and at first was chiefly in the mid-epigastrium, but later moved down until it was quite low in the abdomen and more severe in the right iliac region. The pain was mild for four days and aching in nature; then it became much more severe, becoming a constant "cramp-like" or "doubling-up" pain. The abdomen was very tender, and any motion of it produced intense pain. The patient had been nauseated throughout the entire illness, but vomiting, expulsive in nature, occurred only once, having been induced by drinking hot water. The patient had been slightly constipated ever since the onset of the illness, and four days before admission she took a bottle of magnesium citrate and some cathartic pills, which caused the bowels to move and also increased her pain.

The patient had had a right inguinal hernia for twenty-two years which frequently descended, was often painful, and at times was difficult to reduce.

Examination.—On admission, the patient had the appearance of being quite ill. She was moderately obese, and her head, neck and chest presented nothing of significance. The abdomen was tender all over, but especially tender in the right lower quadrant. There was considerable rigidity of the muscles on the right side, preventing the palpation of any mass. A diagnosis of acute appendicitis was made, and the patient was operated on immediately.

Operation and Result.—The peritoneal cavity was opened through a right rectus incision. A little serosanguineous fluid escaped, and at the edge of the incision a greatly swollen mass of gangrenous omentum appeared. The omentum was found to be fixed by its distal extremity to the edge of the internal inguinal ring, and a considerable portion of it had been strangulated between the two points of torsion. The lower twist was just above the internal ring, where the omentum had been twisted into a cord not more than one-eighth inch in diameter. The portion of the omentum below this twist was healthy, probably having received a blood supply from adhesions. The upper twist had a thickness of about three fingers, and when unwound, was found to have undergone five and one-half complete turns. The gangrenous portion was ligated and removed, and a normal appendix was also removed. The uterus was found to be the seat of multiple fibroid tumors, but on account of the poor condition of the patient, these were not disturbed. There was a hernial sac on the right side, but this was empty at the time of operation. The patent internal inguinal ring was closed by suture from within the abdomen. The incision was closed without drainage. Convalescence was uneventful, and the patient obtained a complete recovery.

REVIEW OF LITERATURE

Since torsion of the omentum was first recognized by Oberst in 1882, new cases have been continually reported, so that in 1915 Bookman[1] was able to enumerate 131 cases in the literature, while an estimate of unrecorded or unrecognized cases would make the number much higher. The condition is therefore uncommon rather than rare, and not so interesting as a curiosity as it is from the standpoint of diagnostic significance. Richardson has defined torsion as a twisting of the omentum on itself, causing sufficient obstruction of the blood supply to cause strangulation. In general, the condition is more frequent in males, the ratio of preponderance being 3 to 1 (Corner and Pinches[2]), while F. D. Smythe[3] says that it is extremely rare in females. It usually occurs in middle aged persons, and its almost invariable association with hernia is a fact important both in etiology and in diagnosis.

The causation of torsion of the omentum is not clear. Some abnormal fixation of the omentum seems to be the universal and predisposing factor. Such a fixation is most frequent in the sac of a hernia, although all intra-abdominal adhesions are possible causes. The two fixed points of the omentum are poles between which the structure is swung (to use an apt comparison of Bookman's) in a manner similar to a hammock. Added to this static condition there must also be an active extrinsic mechanical element bringing about the torsion, since the omentum of itself is not motile. This active element is commonly believed to be the peristaltic action of the intestine. The normally attached omentum, being fixed at only one pole, is easily twisted by every peristaltic wave, and is equally free to untwist. The omentum that is fixed at two extremities, however, when turned about by violent peristaltic action is turned between two zones of torsion. Such a condition must necessarily cause the previously loosely hanging structure to be shortened and tightened between its points of fixation, thus itself impeding its unraveling. It is probably such a shortening and tightening of this band of tissue that prevents the structure (which under normal conditions can easily untwist) from falling back again into its normal position.

The pathologic changes occurring in the twisted omentum are those of strangulation, i. e., anemia or congestion with stasis terminating in gangrene. Infection is rare and is usually hematogenous. In addition, the transverse colon may be caught in the torsion and undergo similar changes, with symptoms of intestinal obstruction. The symptoms in any case will depend on the nature of the torsion; the most complete classification of the different types that may be found has been made by Payr:

1. Torsion without coexisting hernia:
   (*a*) Of the omentum only.
   (*b*) Of the omentum plus adhering viscera.
2. Torsion with coexisting hernia:
   (*a*) Of the intra-abdominal portion only.
   (*b*) Of the hernial portion only.
   (*c*) Complicated cases:
      (1) Involving both portions.
      (2) Either type, associated with retrograde incarceration.

Corner and Pinches give a somewhat simpler division into:

1. Torsion purely abdominal, with no hernia present.
2. Torsion purely hernial. This is the type commonly not recognized as torsion, but diagnosed as strangulated omental hernia.
3. Abdominal torsion complicating a hernia. This is by far the largest group, and is the type usually referred to as torsion of the omentum.

In a condition of such a variable nature the symptomatology must be necessarily multiform. This is even more evident when we consider the complex nature of

1. Bookman: Ann. Surg. **61**: 730, 1915; Am. J. Surg. **29**: 394, 1915.
2. Corner and Pinches: Am. J. M. Sc. **130**: 314, 1905.
3. Smythe, F. D.: Surg., Gynec. & Obst. **3**: 531, 1906.

the mechanical factors. Bookman thinks that the symptoms are produced chiefly by the interference with the omental blood supply. It seems most probable, however, that the traction of the tightened band of omentum on the stomach, the transverse colon and their peritoneal attachments is the all-important factor in symptomatology. Pain is the first symptom to appear, usually the most conspicuous, and the only one constantly present. The pain is often sudden in onset, usually abdominal, and frequently referred to McBurney's point, although occasionally referred to the hernia. Corner and Pinches state that there is usually no history of previous illness referable to torsion, although sixteen cases are cited in which previous abdominal symptoms, chiefly pain, were continuous for several weeks. They mention others in which there were histories of recurrent attacks of pain over periods up to nine years. As many as ten complete twists have been found, probably each attack of pain representing an increment of torsion before the final straw brings the patient to operation. Thus, Hartwell [4] reports a case giving a fairly typical history of gastric ulcer lasting many years in which operation revealed a twisted omentum attached to the healthy wall of the stomach. Hale [5] reports a case with a similar attack twenty years previously. In Bookman's case there were indefinite cramplike pains for four months, while in our case there was a history of an acute attack followed by a subacute hiatus of five weeks before the final attack.

The pain is usually of an aching or pulling character, and cramps may be present if there is an attendant ileus. Vomiting, according to Corner and Pinches, is present in one third of the cases, although Bookman believes it is present in nearly one half. Usually the vomiting is frequent and violent; occasionally it is blood stained, although nausea without vomiting may occur. If torsion or knuckling of the intestine occurs, the symptoms of mechanical obstruction supervene. The condition of the bowels is variable. They are usually open, but constipation or even obstipation may occur; blood and mucus may appear in the stool if there is obstruction. The temperature is usually slightly elevated, and there is also a moderate acceleration of the pulse. Some rigidity of the abdomen occurs in well developed cases, but the most significant physical sign is the presence of an abdominal mass, especially when associated with a hernia. Mild leukocytosis, with an increase in the polymorphonuclear elements, is usually present.

The foregoing, in addition to a brief study of the literature of the subject, will indicate how difficult the differential diagnosis may be in these cases. The very infrequency of torsion seldom brings it to the mind of the diagnostician as a possibility. It is most frequently mistaken for appendicitis, since that is the most common surgical intra-abdominal condition and is itself often of variable symptomatology. Volvulus is also commonly diagnosed in this condition, and may actually be associated, as previously indicated. Torsion within the sac of a hernia is always diagnosed as ordinary strangulation, nor is the differentiation of any importance.

F. D. Smythe has tabulated the differential points between torsion and appendicitis. These, however, in the main, are purely relative, and while of general academic interest, they are of little value in the individual case. They indicate only an indefinite probability in diagnosis; but the rarity of torsion makes the probability of its presence infinitely less than that of appendicitis. The more rapid pulse, the lower temperature and leukocytosis, and the less marked septic symptoms, which are usually present in torsion, as well as the possibility of palpating or percussing an abdominal mass, are the most significant of the facts that the patient presents.

A feature in the histories of a number of cases presented in the literature, which seems to us to be of some diagnostic importance, is the nature of the onset. There is a progressive augmentation of symptoms by a series of sharp steps or jumps with intervals of varying length. Such a history is very suggestive of a mechanical disturbance with successive increments, in contrast to the steady and rather smoother continuous aggravation of symptoms in a mounting inflammatory condition. However, from a practical standpoint, there is only one thing that can give the diagnosis of omental torsion any degree of surety, namely, the coexistence of a hernia with the sudden appearance of an abdominal mass. Bookman's correct preoperative diagnosis was based on such a finding; without it a diagnosis is probably impossible. Corner and Pinches hypothesize a type of history, leading to an inferential diagnosis: a man of middle age with an inguinal hernia giving rise to symptoms suggestive in a general way of subacute intestinal obstruction. Examination reveals a painful or irreducible hernia, either incarcerated or strangulated, with a tumor, either in the scrotum or in the abdomen.

The treatment is, of course, operative. Unless there is delay, the condition is not likely to be a severe one, and the operation is technically easy; and it seems to be generally agreed that, in uncomplicated cases, the mortality is almost nil.[6]

4. Hartwell: Ann. Surg. **61**: 626, 1915.
5. Hale, Kelley: Torsion of the Omentum, J. A. M. A. **68**: 977 (March 31) 1917.

6. In addition to the references already given, the following will be found of interest.
Armstrong: Interstate M. J. **20**: 1148, 1913.
Mueller: Ann. Surg. **58**: 498, 1912.
Syms: Ann. Surg., **54**: 269, 1911.
Syme: M. J. Australia **1**: 368, 1918.

CESAREAN SECTION UNDER PROCAIN ANESTHESIA *

J. MORRIS SLEMONS, M.D.
NEW HAVEN, CONN.
AND
J. MURRAY JOHNSON, M.D.
BRIDGEPORT, CONN.

The choice of an anesthetic for cesarean section, always debatable, becomes more difficult in the presence of either cardiac or renal complications; and, if both exist, the problem is indeed a vexing one. Although pregnancy should carry with it some degree of immunity against the toxic effects of chloroform—which is doubtful—certainly its administration to any one suffering from a cardiac lesion would be very dangerous. Similarly, the administration of ether to a patient with pulmonary edema would be hazardous; in such cases even nitrous oxid anesthesia has been followed by pneumonia.

The respiratory distress accompanying decompensated cardiac lesions generally requires that the patient sit up, though confined to bed, and in this position the employment of general anesthesia becomes awkward

* From the Department of Obstetrics and Gynecology, Yale University School of Medicine.

at least. Toward the successful treatment of such patients, in urgent need of relief from the strain of pregnancy, no contribution could be more helpful than satisfactory local anesthesia, permitting a safe and speedy evacuation of the uterus. To be satisfactory the anesthesia must permit the patient to retain a posture both comfortable for herself and not unfavorable to the conduct of the operation. For the mother it must provide a greater factor of safety than does general anesthesia. And it must not deter the establishment of respiration in the new-born.

Recently in a case of broken cardiac compensation at the eighth month of pregnancy with pulmonary edema and increasing albuminuria, the method of anesthesia employed for the performance of cesarean section was put to a severe test; and procain met the requirements just enumerated satisfactorily. On the basis of a single case, ordinarily, we should be reluctant to predict how wide the field of application of a method would prove to be; but since we find that Dr. J. Clarence Webster [1] of Chicago announced its usefulness in 1915, and his opinion was confirmed by the experience of Dr. Hugh H. Trout [2] of Roanoke, we are convinced that our result was not exceptional. The former gynecologist employed it with excellent results in fourteen cases; the latter, among eighteen cases representing various obstetric complications, encountered three maternal deaths from eclampsia and eleven fetal deaths, the cause of which he does not discuss.

REPORT OF CASE

History.—The case which is the subject of this report was that of a young primiparous woman with mitral stenosis and insufficiency decompensated at the eighth month of gestation.

Jan. 3, 1920, she entered the hospital and found temporary improvement from the conservative treatment usually followed in such cases. Ten days later, pulmonary symptoms developed, and on January 15 her distress and her own appreciation of the seriousness of the illness was such that she readily consented to whatever therapeutic measures offered most for her recovery.

At the time she breathed comfortably only when propped upright in bed, and was coughing up a seromucous fluid tinged with blood. General anasarca had developed; the most extensive edema was that affecting the lower extremities and the vulva. The legs, swollen to the utmost, could not be brought together, and were placed comfortably only when abducted about 45 degrees. Each labium majus was distended with at least 300 c.c. of fluid. Through the chest walls, back and front, moist râles were audible everywhere. The area of cardiac dulness was increased; a loud systolic murmur was heard over the whole precardiac area as well as in the axilla; the second aortic sound was accentuated. The irregular pulse was counted between 120 and 140 to the minute; the respirations were 36. The temperature was 99.5 F. The urine, heavily loaded with albumin, contained numerous hyaline and granular casts.

The abdominal wall was edematous, and there were signs of fluid in the peritoneal cavity. The fundus of the uterus was five finger breadths above the umbilicus. The fetus was lying transversely with the head to the left, the small parts in front; the fetal heart, 35 to one-quarter minute, was difficult to distinguish from the maternal pulse. The position of the round ligaments indicated that the placenta was attached to the posterior surface of the uterus.

The clinical problem that the patient presented required an immediate solution, and one logical line of treatment without alternative was open to trial. Since the spontaneous onset of premature labor, which frequently brings relief, had not occurred, in this instance the pregnancy must be terminated by one of the rapid artificial methods. The vaginal route was out of the question, for in the first place the patient could not lie down without serious embarrassment to both respiratory and cardiac activity; and in the second place, edema of the birth canal precluded the requisite exposure for vaginal hysterotomy. Thus, with laparotomy the remaining route by which to evacuate the uterus, another obstacle was encountered in the risk of its performance under general anesthesia; consequently, local anesthesia was chosen. In the conduct of the operation the steps taken, the phenomena observed and the reaction of the patient will be treated more fully than usual; these technical details have an interest beyond this particular complication of pregnancy, and their description may prove useful to those who adopt the procedure, whatever the type of case.

Operation and Result.—Preliminarily, a half-grain of morphin and a hundredth of atropin were administered hypodermically. Then the patient was placed on the table comfortably in a half-sitting posture supported by pillows. The bladder was emptied by catheterization and the site of the operation prepared in accord with the usual tincture of iodin technic. One c.c. of pituitary extract was administered in the thigh as the operation began.

In the median line, from umbilicus to symphysis, the skin was infiltrated with procain solution, 1:400, to which epinephrin had been added in the proportion of 3 drops of epinephrin to each ounce of procain solution. For cutaneous anesthesia, approximately 30 c.c. of the solution were required, and that sufficed not only during the division of the skin but also of the subcutaneous fat, more than an inch in thickness. As the continuance of the incision caused discomfort, about 20 c.c. of the procain solution were used to infiltrate the fascial layer. Probably the position of the incision, directly in the midline, accounted for the fact that special treatment of the parietal peritoneum was not required; this structure may have been reached by the injection of the anesthetic into the fascia.

After the peritoneal cavity was opened, several hundred cubic centimeters of ascitic fluid were expelled, and loops of small intestine floated in front of the uterus into the upper angle of the wound. These were held back by abdominal pads. The uterus was not delivered through the abdominal incision. Without procain infiltration that portion of the organ which appeared was tested with regard to sensitivity and, as the patient was unable to detect when the knife was in use, after the membranes were exposed, the uterine incision was prolonged with bandage scissors until approximately 15 cm. in length. During this procedure the membranes ruptured and a fetal hand came into view. The fetus was delivered through the aperture in the uterine and abdominal walls by the method usually followed in breech extraction. Careful delivery of the arms, one at a time, and good flexion of the head simplifies the extraction and renders less likely the prolongation of the uterine incision with a ragged tear. The patient made no complaint after the abdominal fascia became anesthetized, was not aware that the fetus was being delivered, and subsequently, except for questions regarding the likely duration of the operation, made no comment.

The loss of blood was not excessive, probably not greater than 400 c.c. After the placenta was removed, the uterine cavity was wiped out with large gauze sponges to remove fragments of the membranes, if left behind, and also to remove blood clots. The internal os, almost closed, was not disturbed, for the uterus had retracted firmly, bleeding had nearly ceased, and we preferred to save time and run no unnecessary risk of causing pain.

The uterine wound was closed with two tiers of catgut sutures. The placing of the deeper interrupted sutures was awkward because the uterine incision retracted to a lower level than the abdominal incision; this difficulty was over-

1. Webster, J. C.: A Series of Abdominal Caesarean Sections Performed Under Local Anaesthesia, Surg., Gynec. & Obst. 20:221 (Feb.) 1915.
2. Trout, H. H.: Caesarean Section Under Local Anaesthesia, Surg., Gynec. & Obst. 27:95 (July) 1918.

come by using the sutures already in place for upward traction. The upper continuous suture approximated the peritoneal edges of the uterine wound. The abdominal wall was sutured in layers without further use of procain. The peritoneum was closed with a continuous catgut suture, and similarly the muscle edges were brought together. The fascia was united with interrupted catgut; the skin and subcutaneous tissue with interrupted silkworm gut. The postoperative convalescence of the mother was afebrile and without untoward complication.

COMMENT

We can confirm Heaney's observation [3] that resuscitation of the new-born requires less arduous measures after cesarean section under procain than under general anesthesia. In this instance the infant began to breathe immediately after its removal from the uterus. It weighed 2,000 gm (about 4½ pounds) and measured 42 cm. (16½ inches) in length.

In this case the successful local anesthesia, we believe, must take into account two facts, namely, the initial administration of morphin and the cooperative attitude of the patient. To the former we ascribe the complete control of coughing during the operation—a complication from which we had expected considerable annoyance. It is pertinent that the patient expressed great relief as soon as the uterus was emptied. A less cooperative subject, we can readily understand, would make the employment of local anesthesia impossible.

Certain features of our technic, differing slightly from that described by Webster and by Trout, probably served to spare the patient no little pain. The method employed here was the one we follow as a routine in the performance of cesarean section, and we were not aware that it differed from the technic of others until the papers in question were recently consulted. Thus, the grasping of the lower uterine segment, which Webster found to be a painful maneuver because it placed the ligaments under tension, was unnecessary in our case, for the degree of hemorrhage was not extraordinary.

The delivery of the uterus through the abdominal incision, which Trout described as a crucial step in the operation and the cause of severe pain, is rarely advisable even with general anesthesia. The procedure requires a longer abdominal incision than otherwise, renders more difficult the control of the intestine, and tends to increase the likelihood of infection. If this step in the operation under local anesthesia is omitted, the patient is spared at two points, namely, when the uterus is delivered and when the fetus is extracted. If it lies within the peritoneal cavity, traction on the uterus beyond a given degree is prohibited by the opposition of the abdominal wall, and the ligaments are not stretched.

In general, we agree with Webster and endorse his recommendation of procain whenever a general anesthetic would be unsafe. The solution he used was twice the strength of the one which gave us perfectly satisfactory conditions for an uninterrupted operation. We learn also from reports of its use in general surgery that a 0.5 per cent. solution has been employed without fear of toxic effects even when 200 c.c. were required. Since in that case the subjects were not suffering from cardiac lesions, they are scarcely comparable with our patient, and probably no mistake was made in limiting as far as possible the quantity of procain she received.

If the introduction of this method has any unfavorable results, probably they will be in the nature of extending too far the indications for cesarean section, namely, to cases in which the termination of pregnancy should be secured by the less radical methods for inducing the onset of labor. Therefore, it is important to emphasize the fact that the proper treatment of obstetric complications must not be confused with the question of anesthesia. The former problem must be solved in the light of sound teaching which will contrast the ultimate results obtained, on the one hand, by recourse to cesarean section and, on the other hand, by the use of more conservative procedures. The latter question requires an answer when a frank indication for laparotomy exists and the choice lies between general and local anesthesia. In these circumstances, if local anesthesia is preferable, procain may be employed with ease and confidence. To the mother it offers the requisite safety; and it has less influence toward prolonging the initial period of apnea in the new-born than has ether, nitrous oxid or chloroform.

3. Heaney, quoted by Webster (Note 1).

OBSERVATIONS ON A GREEN-PRODUCING COCCUS FROM THE BRAIN IN A CASE OF ENCEPHALITIS *

S. JOHN HOUSE, M.D.
CHICAGO

I wish to report the results of the bacteriologic examination in a case of encephalitis, diagnosed clinically as encephalitis lethargica.

The case was that of a woman, aged 70, who entered the Cook County Hospital, service of Dr. J. A. Wolfer, March 5, 1919, with impaired mentality, apparently complete loss of memory, and a broken forearm. The present illness was said to have come on suddenly one morning three weeks previously with dizziness. Following this, came mental changes that grew progressively worse. The forearm was broken while preparing her for the trip to the hospital. In the hospital, in addition to these changes, arteriosclerosis was found with increased knee jerk. She lived twelve days in the hospital. There was little or no fever (axillary) until the eighth day, when the temperature rose to 100 F., and also a few hours before death, when there was a sudden rise to 105 F. The respirations ranged between 19 and 22, rising to 38 five hours and dropping to 12 one hour before death. The pulse was about 80 most of the time, increasing in proportion to the temperature. She had no control over the bladder. She slept a great deal of the time, and when not sleeping was stuporous and talked at random. Nothing abnormal was found in the urine except a few white cells on one occasion. The white blood cell count on three examinations at two-day intervals was 8,800, 9,400 and 12,000. No Wassermann, Lange or Nonne tests were made. The duration of illness was five weeks.

Anatomic Diagnosis (Dr. E. R. LeCount).—Encephalitis (lethargic type?); congestion and edema of the leptomeninges; hemorrhages in the trachea and lungs; hyperplasia of the tracheobronchial lymph glands; foramen magnum pressure furrow of the brain stem; marked general anemia; Colles' fracture of the left arm; petechial hemorrhages of the lining of the stomach, trigon and rectum; senile arteriosclerosis; chronic diffuse nephritis; atrophy of the cerebral cortex; fibrous perivascular leptomeningitis with scars; external fibrous pachymeningitis.

Sections for microscopic study were taken from cortex of frontal and parietal lobes, lenticular nucleus and internal capsule, thalamus and hypothalamus, cerebral peduncles, pons,

* From the John McCormick Institute for Infectious Diseases.

and medulla, and stained by the toluidin blue, Gram-Weigert, and hematoxylin-eosin methods.

An encephalitis was present, characterized in the cortex by an increase in glia cells, neurophagia, a shrinkage of the nerve cells in their lacunea, and a marked reticulation of neuroglia tissue. These changes were present in other sections also but to a less marked degree. There was a small amount of perivascular infiltration in some sections. Many of the small venous channels were greatly congested; no hemorrhages or typical plasma cells were seen. There was no evidence anywhere of thrombosis of the cerebral vessels.

In the sections stained by the Gram-Weigert method a few large diplococci and ovoid forms, similar in size and shape to those isolated and studied in pure culture, were seen. There was no regularity in their association with the pathologic changes, as they occurred both in the interstitial tissue and in relation to the cells showing neuronophagia.

Material was taken from the brain for cultures eleven hours after death. This material was obtained by means of sterile capillary pipets which were plunged into the brain at places seared by a red-hot spatula. The sites selected for this were the insula, the cerebral peduncle (about 0.5 to 1 cm. proximal to the pons), and along the inferior lateral border of the temporal lobe. The direction and depth of insertion of the pipets were gaged by sections of a brain hardened in formaldehyd. Then by a few short jabbing motions, with suction at the same time, brain material was drawn into the pipettes and transferred to tubes of melted agar (10 c.c.), kept at 46 C., to which goat blood had been added (10 drops to the tube). The material was emulsified against the sides of the tubes, appropriate dilutions made and plates poured in the usual way. These were incubated for twenty-four hours and studied. A diplococcus developed in pure culture. Not one of the uninoculated plates yielded any growth.

The cerebrospinal fluid and heart blood obtained postmortem were sterile.

The diplococcus stains by Gram's method: The individual cocci vary in size from about 0.25 to 0.75 micron in diameter, the greatest variation being seen in the short chains which contain from four to eight elements. The diplococcic forms, although similar in shape, differ markedly in size. There are also a few large ovoid forms, 0.75 to 1.25 microns in diameter, which occur singly. All these variations are to be found in a twenty-four hour blood-agar culture.

On blood-agar plates, after twenty-four hours' incubation, pin-point colonies are formed surrounded by a 0.5 mm. greenish zone; the surface colonies are larger, 0.5 to 1 mm. in diameter, greenish and have a greenish zone about them; they are round, moist, and slightly convex. After seventy-two hours there is a small amount of true hemolysis around the colonies. In plain broth a smooth cloudy suspension is formed with some fine white sediment which is readily diffusible. On plain agar, a moderate growth occurs which is moist and slightly opaque to reflected light. On blood serum, the organism grows rapidly. Litmus milk is made slightly acid. Using a 1 per cent. solution of the various sugars in sheep-serum water, with litmus as the indicator, lactose, mannite, salicin, dextrose, and saccharose were fermented; inulin was not. The final readings were made after seventy-two hours.

Rabbits and guinea-pigs were injected by various routes, including the intracerebral, with a thick suspension of twenty-four hour cultures of the diplococcus recovered from the brain, but all remained well except one rabbit that died sixteen days after the injection, apparently from some other cause.

Normal rabbits were injected intravenously at weekly intervals with suspensions of this organism, heated at 56 C. for thirty minutes. The suspensions were made from blood-agar slants, the initial dose being one slant. After repeated injections, serum was drawn and its agglutinins and opsonins studied. In both the agglutination and opsonic tests, twenty-four hour dextrose broth cultures were used with normal rabbit serum and salt solution controls. The agglutination mixtures were incubated at 37 C. for two hours, placed at room temperature for eighteen, at which time the final readings were made. In the opsonic tests, fresh normal human leukocytes were used, and the final mixtures (diluted serum, leukocytes and dextrose broth suspension) were incubated at 37 C. for thirty minutes, smears made on slides and the point of opsonic extinction determined.

The results shown in the table indicate that immunologically the coccus isolated is distinct from similar green-producing cocci from poliomyelitis, influenza and other sources.

It is of special interest that von Wiesner,[1] the only observer that so far as I know has reported the results of bacteriologic studies of cases of epidemic encephalitis, recovered a gram-positive diplococcus from the brain of every case which he examined (he does not say how many). He does not state that he found the organism in the microscopic preparations.

It is to be noted that the type of changes in this brain are essentially the same as those described by Bassoe and Hassin[2] in their report of three cases, the chief difference being one of degree. It is also interesting to note that a careful review of the reported cases of epidemic (lethargic) encephalitis has failed to reveal any uniformity in the degree in which these changes may occur in the various portions of the central nervous system; nor is there any definite grouping of pathologic changes that can be described as occurring in all of the reported cases.

REACTIONS OF SERUM OF RABBIT INJECTED WITH ENCEPHALITIC COCCUS

Strains of Cocci	Agglutination	Opsonic Extinction
Encephalitic coccus used for immunization	50,000	6,400
Poliomyelitic coccus	800	150
Poliomyelitic coccus	100	75
Poliomyelitic coccus	400	300
Green producing streptococci from influenza:		
Brain	1,600	1,200
Brain	1,600	150
Brain	1,600	75
Brain	1,600	6
Lung	1,600	300
Lung	1,600	35
Sputum	1,600	15
Lung	400	0
Cerebrospinal fluid	200	35
Pneumonia	200	6
Cerebrospinal fluid	100	15
Blood	100	15
Sputum	50	0
Lung	50	0
Cerebrospinal fluid	50	35
Blood	0	0
Sputum	4	15
Several strains of green producing cocci from measles and rubella	0	0

With normal rabbit serum the encephalitic coccus was agglutinated at a dilution of 20 only; practically no phagocytosis.

The fact that the heart blood and cerebrospinal fluid were sterile indicates that the infection of the brain was not agonal.

The diplococcus isolated is a large green-producing streptococcus, similar in many respects to other green-producing cocci, but apparently different in its immunologic reactions.

1. Von Wiesner: Wien. klin. Wchnschr., July 26, 1917; quoted by Wilson, S. A. K.: Lancet 2:7 (July 6) 1918.
2. Bassoe, Peter, and Hassin, G. B.: A Contribution to the Histopathology of Epidemic ("Lethargic") Encephalitis, Arch. Neurol. & Psychiat. 2:24 (July) 1919.

Hospital Ventilation.—A highly successful hospital superintendent attributes a great amount of his success to the fact that he has made a study of, and has been able to recommend and put into operation, a plan for the systematic ventilation of hospitals of which he has had charge, and this arrangement has been so satisfactory that doctors give his hospital preference wherever possible. He has found, he says, that the condition of the air has more to do with the health of the patients than most of us have any idea of, and that instead of mechanical equipment rightly installed proving an expensive proposition, it is in reality a most economical method.—C. A. Eddy: *Hospital Management* 9:45 (Jan.) 1920.

Clinical Notes, Suggestions, and New Instruments

A SCREW TRACTOR FOR USE WITH THOMAS' SPLINT

R. M. YERGASON, M.D., HARTFORD, CONN.
Associate Orthopedic Surgeon, St. Francis' Hospital

The Thomas splint and its recent modification, the so-called new model or high-bridge splint, require suspension in order to keep the ring, or its equivalent, beneath and against the tuber ischii as the point of countertraction. The entire extremity and splint are balanced to maintain this suspension by two or more weights, aggregating, let us say, 20 pounds. For the sake of clarity I shall speak of this as the upper, or balance, weight. If we desire to apply 15 pounds of traction to the extremity by means of weights and pulleys, this weight is added to that of the splint and leg and must be compensated by an equal amount added to the balance weight above.

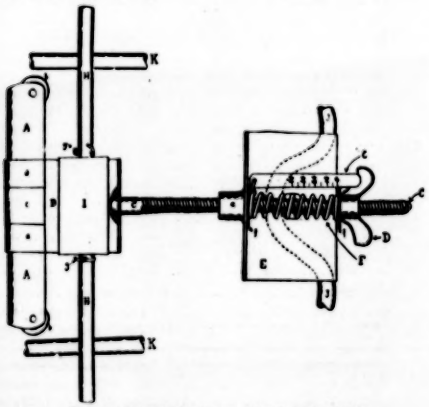


Fig. 1.—Details of tracter, viewed from above.

Should this be carried out we should have the weight of the extremity and splint plus 15 pounds, balanced by 35 pounds as an upper weight. This gives a total of close to 70 pounds to be carried by the Balkan frame. All this is heavy and a nuisance, and the patient justly feels that there is a great weight hanging over him. If a traveler is used to enable the patient to move up and down the bed, such a weight is out of the question. It therefore becomes necessary to do away with weight and pulley traction when using suspended splints.

To accomplish this desirable end, several tractors depending on a screw have been devised. Some of these lack a means of determining the amount of pull; others are heavy, clumsy or difficult to apply.

My purpose here is to describe a tractor which, in addition to eliminating some of these difficulties, is adaptable to various conditions and different splints.

The tractor consists of the following main parts, each of which I shall later describe somewhat in detail: A horizontal cross-piece (*A*) corresponding to the wooden block of the old Buck's extension; a hook-shaped piece (*B*) which furnishes a seat for both the cross-piece and the head of the screw; a screw (*C*), provided with a wing nut (*D*), by means of which the traction is applied; a carrier (*E*) for attaching the tractor to a Thomas splint; a spring (*F*), bearing a scale (*G*) for the purpose of measuring the amount of traction, and a transverse rod (*H*) carried by the bearing (*I*) for the purpose of preventing rotation out of the horizontal plane.

The cross-piece (*A*), corresponding to and taking the place of the foot block of the old Buck's extension apparatus, consists of a piece of 3/32 inch sheet iron (*A-A*), 5 by 1 7/8 inches, bent on itself lengthwise, and thus furnishing a mount for two small brass pulley wheels (*b-b*), which measure 5/8 inch in diameter by 1/4 inch thick. At its central part the cross-

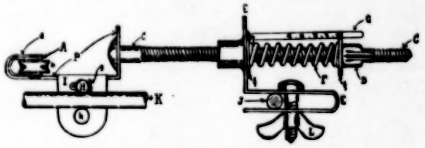


Fig. 2.—Details of tractor, side view.

piece is thickened by means of a second piece of 3/32 inch sheet iron (*c*), 3/4 inch wide, soldered to *A*.

The second part or hook-shaped piece (*B*) is made of 3/32 inch sheet iron. At one end (proximal) it is bent into two hooks (*d, d*) which serve as a seat into which the cross-piece (*A*) slips easily and is there firmly held. At the other (distal) end, this piece (*B*) is bent up at a right angle where a 3/4 inch hole allows the bolt (*C*) to be slipped into place. The top of this up-standing portion is rounded from side to side.

The bolt (*C*) is a standard 5/16 inch carriage bolt 6 inches long, threaded all the way down, and carrying the wing nut (*D*).

The carrier (*E*) is of 3/32 inch sheet iron. Its lower portion is quite wide (3 inches), and is so bent as to grasp the U-shaped bend at the end of the Thomas splint (*J*), to which it is clamped by means of a small bolt and wing nut (*L*). The upper part carries the bolt (*C*) through a sleeve of 3/8 inch tubing (*e*), which is braized on. The bolt slips loosely through this sleeve and is not threaded into it in any way. Above the sleeve the carrier (*E*) is rounded from side to side. The compression spring (*F*) slips easily over the bolt. Attached to the spring by means of one link of chain is a small copper tag or scale (*G*), the graduations of which denote the amount of traction in pounds. The washers (*f-f*) at each end of the spring serve as points between which the length of the spring may be conveniently measured.

Across the hook-shaped piece (*B*) is a saddle shaped bearing of sheet iron (*I*); through the two holes of which a 1/4 inch rod 8 inches long (*H*) is passed and held in place by two cotter pins (*g-g*). This rod rests on the side bars of the Thomas splint (*K*).

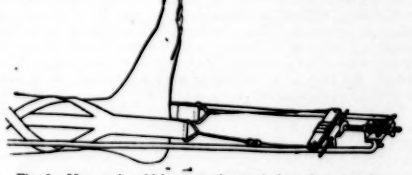


Fig. 3.—Manner in which tractor is attached to the extremity.

To attach the tractor to the extremity, wire triangles or D-rings are fastened to the adhesive plaster stickers. To one of these the end of a piece of picture wire is made fast. The other end of the wire passes through the D-ring of the opposite sticker and is attached to itself by means of a small jamb cut from a scrap of sheet iron (Fig. 3). The bight or free loop of the picture wire is laid over the two pulleys of the tractor, and all slack is taken up by means of the jamb. Traction may now be applied by means of the wing nut (*D*), the amount of the compression of the spring being read on the scale.

There are great advantages in this method of attachment. Should the adhesive slip or lengthen on one side of the leg, the wire will adjust itself around the pulleys and the result will be a slight lessening of the traction. The pull will remain steady, however, and equal on the two sides, as the cross-piece will not take the oblique position commonly appearing in the foot block of the Buck's extension. The nurse, observing the lessened pull, gives the nut a few turns and all is as before. Further, should the heel pin be used, the picture wire can be measured beforehand, boiled up with the instruments, and applied during the operation. In this case there will be no necessity for disturbing the dressings about the heel pin when the patient has returned to the ward.

As the cross-piece (*A*) is held simply by two hooks between which its reinforcement (*c*) is snugly jambed, it may be slipped out at any time and another style of cross-piece substituted.

The rod (*H*) carried by its saddle (*I*) rests on the side bars of the splint (*K*), thus preventing rotation of the cross-piece. By removing one of the cotter pins (*g*) the rod may be withdrawn and the saddle removed. This is convenient should it become necessary to reverse the tractor and attach it beneath, instead of above, the splint, in which case the saddle may be applied in the inverted position, bringing the rod above the side bars of the splint as before. In this case the holes (*h*) in the saddle are used for the passage of the rod so that the tractor will remain horizontal beneath the splint. By reversing the figured side view of the tractor, its arrangement when beneath the splint will be at once apparent.

The bolt can be slipped out and a longer one, or one of different thread, substituted should this be desirable. In use the bolt may become screwed up to the point where its head is close to the sleeve (*e*) of the carrier. In this event there will be no traction on the extremity, shortening of the spring simply indicating the amount of force with which the bolt head is drawn against the sleeve. This is a small point to guard against in the use of the tractor. Should it occur, all that is necessary is to turn the wing nut back to the end of the bolt and take up the slack of the picture wire by which the tractor is attached to the extremity.

As regards measurement of the traction, any spring of the compression type (in contradistinction to the expansion type) which will slip easily over the bolt may be used. An unknown spring is placed on the tractor, which is attached to the splint, and a spring balance substituted for the extremity of the patient. The blank copper tag is scratched to indicate the length of the spring under varying amounts of traction as shown by the spring balance. The tag is attached to the spring, constituting a scale to indicate the amount of traction on the leg. A spring which is compressed about ⅛ inch for each 5 pounds and is long enough to indicate 40 or 50 pounds of traction, before being completely pressed together, will be found most convenient.

To use the tractor with the high-bridge splint, the clamp of the tractor may be attached to the lower bar of the strap-iron rectangle at the distal end of the splint (Fig. 5 *M*). More satisfactory than this, however, is to fasten a bar of flat metal (*N*) across the rectangle. This bar should have a hole ⅜ inch in diameter at its middle point, through which the bolt (*C*) of the tractor is passed. This new bearing does away with the necessity of the clamp and sleeve (*E*), which is removed. The tractor may be attached to the movable leg-piece of the high-bridge splint, in a similar way, by simply boring a hole in the middle of the transverse part of the leg piece.

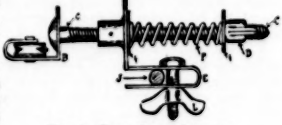


Fig. 4.—Short form of tractor.

The whole tractor as described is only 8 inches long. A much shorter form may be had by using a permanent cross-piece, eliminating the cross rod (*H*) and using a shorter bolt (Fig. 4). This makes possible its use with a splint only very slightly longer than the extremity.

ADVANTAGES

The advantages of the tractor may be thus summed up: It weighs only a few ounces, yet will produce any desired amount of traction. Although designed for use with the Thomas splint, it may be easily attached to any other metal splint. It is quite short, which economizes space in the length of apparatus, a by no means minor consideration. Various springs may be used, so that very light or extremely heavy traction may be applied. The compression spring has a distinct advantage over the expansion or spring balance type of tractor, for it occupies less room in the splint the greater the traction, whereas the expansion spring lengthens with greater tension, thereby necessitating a longer splint. The foot-piece with pulleys does away with the obliquity of the old Buck's extension foot-block, and eliminates torn adhesive stickers. The ease with which the tractor is assembled makes possible the substitution of different parts to meet special or varying conditions. The apparatus is simple and easy of construction. In use at the St. Francis Hospital we have found it satisfactory in every way.

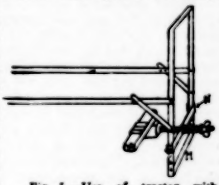


Fig. 5.—Use of tractor with high-bridge splint.

54 Church Street.

ACUTE HEMORRHAGIC NEPHRITIS SECONDARY TO MIDDLE EAR INFECTION

REPORT OF CASE

JOHN W. SHUMAN, M.D., SIOUX CITY, IOWA

Renal irritation, indicated by albumin, casts and red and white blood cells in the urine, and "focal infection" I have witnessed a number of times; but the case reported here offered the first opportunity to observe an acute renal irritation of such severity, secondary to suppurative otitis media, complicated by mastoiditis and lateral sinusitis, caused by the streptococcus micro-organism, from onset to recovery.

The child was examined, Dec. 2, 1919. About this time a very helpful article by Dr. Lewis Webb Hill[1] appeared in THE JOURNAL, in which were mentioned four cases of nephritis secondary to otitis media.

This case is reported as corroborative evidence of the material presented in that article, and for the aid it may give to those encountering the same or similar pathologic conditions. It emphasizes the fact that renal disturbance is a secondary rather than a primary disturbance.

REPORT OF CASE

A girl (Record No. 1948), aged 3½ years, was admitted, Dec. 2, 1919, to the eye, ear, nose and throat service of Dr. J. B. Naftzger, St. Joseph's Hospital, Sioux City, Iowa, with the diagnosis of suppurative otitis media. The left ear was discharging. The temperature was 100 F., the pulse, 130. Blood examination revealed: white blood cells, 36,200; polymorphonuclear neutrophils, 74 per cent. Mastoid tenderness and "shadowed" cells, demonstrated by the roentgenogram, were present. These findings led to the diagnosis of mastoiditis complicating suppurating otitis media. But the urinalysis by Dr. Mortimer Herzberg (director of the laboratory) complicated things greatly: amount, 5 ounces; bloody; acid; specific gravity, 1.015; albumin present in large amounts. Microscopic examination revealed an enormous number of red blood cells and a number of granular casts.

It was decided at consultation that the renal condition was secondary to the ear infection, and mastoidectomy was performed under nitrous oxid anesthesia administered by Dr. R. M. Waters. The mastoid cells were necrotic. A report of cultures was: "a few isolated diplococci; a few short chains

1. Hill, L. W.: Acute Nephritis in Childhood, J. A. M. A. 73: 1747 (Dec. 6) 1919.

of streptococci; some diphtheroid and staphylococcic microorganisms."

At the time of operation the lateral sinus was exposed and appeared not to be involved, but the symptoms did not disappear after the operation; in fact, they became more alarming. December 7, five days later, the temperature was 105.4 F., the pulse 140 and white blood cells, 22,500 (polymorphonuclear neutrophils, 82.1 per cent.). The urine (twenty-four hour quantity, 7 ounces) was very bloody and contained albumin + + + and many granular casts. Physical examination was otherwise negative. On account of these conditions it was thought that the lateral sinus was involved, so Dr. R. Q. Rowse ligated the left external jugular and Dr. Naftzger opened and cleared out the sinus which was thrombotic. Following this procedure, the temperature descended by lysis (normal, February 8), the urine changed and became "smoky" four days later, and the albumin was ++ instead of +++. A week later, the albumin was + and January 22 there was only a trace. The same decrease in pathologic evidence was observed in the microscopic findings. Jan. 25, 1920, the patient was discharged from the hospital.

LATER DATA

The urinalysis was negative January 9, and remained so until January 29, at which time the little girl complained of "a hurting" in the urinary bladder region and urinated small amounts frequently. Albumin and a number of red blood and pus cells were found in the voided specimen. That night the mastoid incision, which had healed over, "opened and drained pus." The urine of February 3 was negative except for an occasional red blood cell. This would appear as added evidence to substantiate the belief that the middle ear infection caused the pathologic condition of the kidney.

Frances Building.

THYROTOMY IN REMOVAL OF A SUBGLOTTIC LARYNGEAL EPITHELIOMA

BERTRAM C. DAVIES, M.D., LOS ANGELES

The question of routes in operating for the removal of laryngeal growths is one that cannot be settled by any fixed rule. A decision must be based largely on (1) location and (2) variety of growth.

Obviously a papilloma, located, as it usually is, on the vocal bands in the anterior part of the larynx, occupying the supraglottic region, and being more or less pedunculated, can be snared off by the direct or indirect endolaryngeal route. Other and more serious growths, depending on their location, may be removed by the same route. Occasionally there is an epithelioma that has a reasonably long pedicle, even though it be subglottic, that may be removed by direct laryngoscopy. No general rule applies, however, and specific consideration must be given in each case as to the route of operation.

The case here reported demonstrates, among other things, that some study is necessary at times before any decision can be reached.

REPORT OF CASE

History.—W. B., man, aged 66, bricklayer, seen May 4, 1919, whose father and mother were over 80 years old at death, weighed 170 pounds, and there had been no change in weight during the last two years. He had had the ordinary diseases of childhood. He denied venereal infection. When 21 he had bronchitis, which lasted several years; he was quite ill with abnormal temperature and considerable cough, raising thick mucus. He was unable to work. Recovery had been slow. He had been a heavy smoker for the last twenty-five years. About six months before, he had noticed his voice becoming hoarse and weak. There was no pain or cough and deglutition was normal. There had been gradual increase in hoarseness, which was more marked during the past month and was worse at night or when the patient was tired.

Physical Examination.—The nose and nasopharynx were negative. There was granular pharyngitis. There was marked "hooding" of the epiglottis, but no inflammatory condition. The mucous membrane of the arytenoids was injected and swollen, with superficial ulceration in the posterior commissure. The false cords were swollen; this swelling, together with the condition of the arytenoids, obliterated all but the anterior third of the true cords. Some injection of the true cords was noted. Examination of the chest gave evidences of healed pulmonary lesions, some emphysema, and fine râles over both apexes. Roentgenoscopy revealed scar tissue rather evenly distributed over both lungs, with a slight increase on the left side. The Wassermann test was negative. The von Pirquet reaction was ++. The blood count was normal; hemoglobin, 85 per cent. A tentative diagnosis of tuberculous laryngitis was made.

Treatment and Course.—The intratracheal use of argyrol, 30 per cent., daily, was prescribed, and tuberculin was given. Smoking was stopped. Phonation was discontinued. Alternating hot and cold packs were employed one-half hour at bedtime.

After four months' treatment the ulceration healed and the laryngeal swelling subsided, the true cords gradually coming into view. This was largely due, no doubt, to interdiction of the use of tobacco and the employment of voice rest.

Under cocain, 20 per cent., the direct laryngoscope was used and a positive diagnosis of epithelioma was made. The neoplasm was subglottic, lying under the left cord and not having a pedicle; it was white, papillary, and incorporated in the body of the cord for its full length, leaving the edge free. There was no inflammation of the cord or the surrounding tissue.

November 3, thyrotomy was performed under ether anesthesia by the open method.

Some authorities advise preparatory tracheotomy some days previous to this operation, but it was decided to perform the two at one time.

Operation and Result.—A median incision was made from the os hyoideum above to the level of the fourth ring. Careful dissection was then done, exposing the thyroid and cricoid cartilages and tracheal rings. Whenever possible, blood vessels were ligated before cutting. This was not always feasible; but the amount of blood lost did not exceed 2 ounces. When the field of operation was entirely exposed, the second tracheal ring was incised and a No. 4 tracheotomy tube inserted.

At this stage the anesthetist changed his position and administered the ether by means of a saturated pledget held over the opening of the tube.

The attempt was next made to incise the thyroid cartilage, passing a knife through the cricothyroid ligament; but in this particular case, ossification had taken place and bone had replaced cartilage. Several efforts were made with different instruments, keeping in mind the necessity of avoiding injury of the cords; finally separation of the lateral halves was accomplished with a heavy pair of Seiler's turbinal scissors. Even retraction of the lateral halves then gave a good view of the neoplasm, verifying the diagnosis as to the location and probable nature of the growth. At this juncture a gauze pack was introduced into the trachea at the cricoid level to prevent leakage of blood from above, as well as to aid the anesthetist by forcing respiration by way of the tracheotomy tube.

A wide and careful dissection was done, carrying the incision down to the lateral wall of the thyroid and back to the arytenoids, including the cord with the tumor mass, leaving, however, a narrow border of the upper portion of the cord. The tissue below the site of the tumor was dissected and the edge drawn up and sutured to this remaining portion of the cord, thus affording a line of articulation for the right cord. Subsequent events have justified this effort, as the patient's phonation is quite as good as before the operation.

The hemorrhage was very slight, and only three catgut sutures, No. 00, were necessary to produce closure of the tumor site.

The tracheotomy pack was now removed and the halves of the thyroid cartilage were brought together and held by chromicized catgut through the perichondrium and surrounding tissue. The skin was closed with silkworm sutures.

A stiff collar of several layers of adhesive plaster was applied over a dry dressing, immobilizing the thyroid carti-

lage. This collar was reapplied after each dressing until union of the halves was accomplished.

The tracheotomy tube was removed on the fourth day.

The patient made an uneventful recovery, having no respiratory difficulty at any time. The temperature at the highest point was 99.4 F. There was little, if any, postoperative pain and total absence of cough. The treachcotomy wound was closed in three weeks. The patient returned to his regular employment of bricklaying in four weeks.

1113 Los Angeles Investment Building.

A CASE OF IDIOSYNCRASY TO ACETYLSALICYLIC ACID

THURMAN D. KITCHIN, M.D., WAKE FOREST, N. C.

The extent to which acetylsalicylic acid (aspirin) is used, both by the profession and the public at large, and the infrequency with which untoward effects result from its use, warrant the report of this case.

REPORT OF CASE

On Thursday, Feb. 5, 1920, an influenza patient was admitted to the College Hospital. The next day he complained of so much pain in his back and head together with general aching, that at noon he was given 5 grains of acetylsalicylic acid. This dose was repeated at 4 o'clock and at 8 o'clock the same day. At 10 o'clock that night there were no untoward effects. The next morning (Saturday) a slight rash was noticed on the face and arms, and although acetylsalicylic acid was suspected, the patient was given another 5-grain dose. In two hours he exhibited a severe form of angioneurotic swelling of the face, especially marked about the eyes. This did not involve the mucous membrane of the mouth and throat. The entire trunk and limbs were covered with an urticaria. The wheals were of irregular shape, and varied in size from one-half inch to more than 2 inches in diameter, and were accompanied with intense itching. This condition lasted all day and did not begin to fade until 11 o'clock that night. By morning it had disappeared.

The patient was a medical student, and with his consent, and purely as an experiment, at this time (Sunday morning) he was given another 5-grain dose of acetylsalicylic acid. In less than an hour the picture described above was exactly reproduced, lasting until the following morning. The patient was then given 2½ grains, and in less than half an hour showed the same results as before, except that this time it lasted thirty-six hours. The patient was now given 1 grain, and in about an hour and a half the same effects resulted, but were less severe and disappeared in about ten hours. It might be added that during all this time the patient received no other drug whatever, and his elimination was apparently excellent.

At no time did the patient show any alarming symptoms, as is usual in such cases. The effect seemed to be entirely limited to the skin manifestations.

COMMENT

There are elements in this case which point either to a cumulative action of the drug or to a condition of anaphylaxis. The fact that so small a dose as 1 grain, given thirty-six hours after a 2½-grain dose, should produce the condition described suggests that either the drug was not eliminated or destroyed in the body as rapidly as is generally thought, or that the first doses rendered the patient hypersensitive to the drug—an anaphylactic reaction.

Rates of Mortality as Related to Conjugal Condition.—The effect of conjugal condition on mortality has often been discussed. The findings of Knibbs, statistician for Australia, are in accord with the usual ideas on the subject: "For males between 20 and 85 years of age the death rate is considerably higher for the 'not-married.' For females the advantage lies with the 'not-married' until the child-bearing period has been passed, after which it lies with the 'married.' The exact age at which the death rates become equal in the case of females is probably about 43 years."

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PHENACAINE. — Holocaine Hydrochloride. — Ethenyl-Paradiethoxy - Diphenyl - Amidine Hydrochloride. — $CH_3C:(NC_6H_4OC_2H_5).(NH.C_6H_4OC_2H_5).HCl + H_2O$. — The hydrochloride of phenetidyl-acetphenetidin, a basic condensation product of paraphenetidin (para-ethoxy-amino-benzene) and acetparaphenetidin (phenacetin). Phenacaine was first introduced as holocaine hydrochloride.

Actions and Uses.—Phenacaine is a local anesthetic like cocaine but having the advantage of a quicker effect and an antiseptic action. Five minims of a 1 per cent. solution when instilled into the eye are usually sufficient to cause anesthesia in from one to ten minutes. It is said not to cause the scaliness of the cornea which sometimes results after the use of certain other local anesthetics.

Dosage.—It is applied in a 1 per cent. aqueous solution. Phenacaine is incompatible with alkalies and their carbonates and the usual alkaloidal reagents. Glass vessels should be avoided in preparing the solution, porcelain being used instead.

Phenacaine is prepared by the interaction of molecular proportions of paraphenetidin sulphate and acetphenetidin in the presence of phosphorous oxychloride, decomposing the resulting phenacaine sulphate with sodium hydroxide, crystallizing the base from alcohol, neutralizing it with hydrochloric acid, and crystallizing.

Phenacaine forms small, colorless crystals; odorless; faintly bitter and producing transient numbness on the tongue; permanent in the air.

Phenacaine is soluble in about 50 parts of water; freely soluble in alcohol and in chloroform; insoluble in ether. On boiling in glass vessels, the aqueous solution becomes turbid owing to a separation of a small quantity of the free base by the alkali derived from the glass. Phenacaine forms a clear, colorless solution in water, the solution having a neutral or faintly alkaline reaction on litmus.

The aqueous solution of phenacaine yields a white precipitate on the addition of silver nitrate test solution or of ammonia water.

The addition of a few drops of chlorinated soda solution to a saturated, aqueous solution of phenacaine produces a finely divided, flesh-colored precipitate. In a few minutes, this separates as a violet-colored precipitate, and if the mixture be shaken with ether, the ether is colored Burgundy-red.

Dissolve about 0.05 Gm. of phenacaine in 2 Cc. of concentrated hydrochloric acid, boil for two or three minutes, cool and add one drop of potassium dichromate test solution. No ruby-red precipitate is produced (*absence of 5 per cent. or more of acetphenetidin or paraphenetidin*).

Dry about 1 Gm. of phenacaine, accurately weighed, to constant weight at from 100 to 105 C. The loss does not exceed 7 per cent.

Phenacaine dried as above melts at 189 C.

To about 25 Cc. of water and 5 Cc. of ammonia water contained in a separator, add about 0.5 Gm. of phenacaine, accurately weighed, which has been previously dried to constant weight at from 100 to 105 C. Extract the free base by shaking with successive portions of chloroform. (Preserve the solution in the separator for the test for phosphorous compounds given below.) Collect the chloroform solutions in a beaker by passing them through a small funnel holding a pledget of cotton. Evaporate the chloroform and dry the free base at from 100 to 105 C. to constant weight. The weight obtained should be not less than 87.5 or more than 90.5 per cent. of the weight taken.

Purify the base by crystallization from hot alcohol, and after drying to constant weight, determine the melting point. It melts at from 116 to 117 C.

To the solution remaining in the separator, after the original extraction of the base, add an equal volume of concentrated nitric acid and boil for five minutes. Evaporate this solution to about 25 Cc. and add to it 25 Cc. of ammonium molybdate test solution. Keep the mixture at a temperature of about 60 Cc. for three hours. No yellow precipitate is produced (*phosphorus compounds*).

Incinerate about 0.5 Gm. of phenacaine accurately weighed. Not more than 0.1 per cent. of ash remains.

Phenacaine-Werner.—A brand of phenacaine complying with the N. N. R standards.

Manufactured by the Werner Drug and Chemical Co., Cincinnati, O. No U. S. patent or trademark.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

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SATURDAY, MARCH 27, 1920

SPIRITS AND THE MEDICAL MIND

The linguistic devices by which we distinguish between a specialist in the laws of the behavior of matter, one who deals with the functions of the body, and still another who ministers to the body diseased, indicate that for human ends we must divide what in nature is joined. We call the one man a physicist, the second a physiologist, the third a physician. The names, like the pursuits, all begin alike, for they are but phases of a common nature. So when any doctrines come forward that threaten to overturn the common foundation of science, physicist, physiologist and physician are equally concerned, and with them in these days the psychologist, who shares somewhat of the habit of mind of all three. But so far as the psychologist has a special warrant to consider belief in spirit-agency or in telepathic or other unrecognized forces, he approaches the matter with the clinical sense congenial to the medical mind.

In this mood he is far more interested in noting why people believe in the revelations of mediums, and flock eagerly to listen to tales and to theories that support their inclinations, than he is in any patient analysis of the evidence to see what it really shows. In the larger aspect this is an anthropological interest, for we know that men in all stages of development have been believers in spirit-agency and have brought forward evidence and theory to hold together their beliefs. We know that this ancient world of folk-belief, of superstition, of readiness to think of things in occult terms, survives in all ultimate issues of human existence. Tap the stream where you will and it shows a common expression. No phase of it is more persistent than the medical; people always want health, and will go through amazing procedures to secure it, swallowing potions and theories with equal appetite. One could write a history of the human mind in terms of the cures that people underwent and the reasons offered for the cult. One could start with humors and temperaments, and wind through exorcism, laying on of hands, mesmerism, clairvoyance, homeopathy and Christian science, with any number of side excursions to delay one's progress. Spiritualist healers who in a trance state prescribe harmless drugs at hurtful prices are by no means obsolete.

But all this is relevant mainly because the type of mind inclining to such cults has in pronounced cases a clinical interest. When we come to mediums who invite a trance-like state to deliver their oracles, like Mrs. Piper, or find that Mrs. Curran can deliver herself of the "Patience Worth" phase of her personality more readily by some slight shunting of the mental gears, or find that Mlle. Smith utilizes a séance room as a stage for her dramatic instincts, we know that there is a psychiatric interest here; and we can the more readily anticipate that a similar or at least congenial trend may be common among their following, who obtain a satisfaction from the belief in the occult. The Freudians (that is, rational Freudians—for despite the common rumor to the contrary, there are such) are ready to see in such expression some compensation for the loss of more real satisfactions, or some converted or perverted outlets for wishes that find a harsh repression in the insistent pressure of a hopelessly complex life. In brief, the will to believe in the supernatural, now so conspicuously resurrected, is a symptom of the stresses and strains to which the minds of men have been put in recent years. The addresses of Sir Oliver Lodge have acted as a respectable mode of relief—that explicit act of confession which Freudians recognize as helpful to ingrowing ailments.

Since all movements take their impress from their leaders, we are particularly concerned with the diagnosis of the spokesmen of the cult. Several hundred years ago, the common or even the educated man who had some real belief in witchcraft or in the journeys of witches through space on brooms, would have been normal enough; but today we should find such belief a ground for mental examination. We should assume that a mind adjusted to the thought-habits of today would have set up a resistance to any such beliefs—assuming any trend toward them—so completely adequate as to reject them without effort. Education is the vaccination that confers immunity; but it does not always take. We are then properly amazed that a mind of superior training, especially in scientific discipline, should subscribe to beliefs on evidence that it is difficult to conceive as convincing to any but a prejudiced will to believe. That kind of predilection when strengthened and systematized, becomes akin to an obsession; it approaches the uncertain borderland in which psychologist and psychiatrist venture together in the hope of bringing order out of chaos. That a peculiarly imaginative man of letters like Maeterlinck should find in the occult an additional outlet for his fancies is not strange; that he should accept square-root-extracting horses as genuine, as men of former days accepted the unicorn as a plausible equine specimen, may indicate a lamentable failing in logic, but

nothing more serious clinically. That Dr. Conan Doyle, though he has long left the medical field for more interesting adventures, should be caught in the same web is in a measure surprising. Yet the conclusion that science does confer an immunity to such tendencies to believe personally engaging conclusions and blind oneself to the irrelevance of the evidence, is not really shaken. The very surprise is a token of the exceptional character of the association of physics or medicine with spirits. For here, too, there is dissociation with a wall rather than a cleft between; the physicist and the physician, though they keep house in the same tenement of clay with the believer in spirits, are not cooperative, though the one borrows utensils and recipes from the other.

In the dissemination of such views, the medical mind has alike an interest and a responsibility. The real illumination of these intricate and elusive relations lies in their clinical aspect; for the clinical sense is a cultivated variety of prospecting among human expressions, and diagnosis is merely an expert form of "sizing up" the sorts and conditions of men that impart variety to an otherwise dull existence. The fact that sanity and sanitation are alike the care of the physician indicates that the medical mind has an important social function. From its point of vantage it sees the ensemble of a forest in what to the wanderers in the jungle of human nature is only a tangle of trees. Beliefs also are symptoms that, placed in their setting, compose into "cases" illuminating and illuminated by collateral findings. In considering the sources and significance of the revival of belief in spirits and the increased tendency to credit varieties of belief and indulge in conclusions reminiscent of earlier stages of mental growth, the medical mind contributes not only an interest associated with its responsibility, but also something in the way of a map to plot the phenomena in an intelligible system.

THE CALCIUM METABOLISM OF INFANTS

Ever since present-day methods of modifying cow's milk for the use of infants have come into vogue, questions pertaining to the preferable proportions of the various milk components have been raised. It is probably no exaggeration to say that one could designate eras in which an undue content of protein, fat or sugar, respectively, in milk was in turn held responsible for various types of infant digestive disturbance or malnutrition. Pediatric progress has made it possible today to control with intelligent dietetic procedures each of the factors just referred to, and their rôle is continually becoming more clearly defined.

The mineral nutrients, especially the indispensable element calcium, likewise have not failed to be included in the controversies of infant nutrition. It will be recalled that cow's milk is decidedly richer in calcium than is the human mammary secretion, the latter containing only about one-fifth as much per fluid volume. The cereal foods so often fed to infants are decidedly deficient in this element. What, then, represents the optimal intake of lime for the artificially fed infant? Is a considerable departure from this detrimental to health? Obviously, a shortage of an indispensable building stone for the skeletal structure is undesirable; but one can also read of a menace from "too much calcium" for infants. Not only is it argued that a liberal intake of calcium may interfere with the alimentary utilization of fats by inducing an excretion of calcium soaps in the stools, but it has also been asserted that a larger intake of calcium leads to a storage in the body which may have injurious effect.

Here, as is so often the case in the medical sciences, scientific data are needed in place of, or at any rate to supplement, empiric conjecture. Holt and his associates have ascertained the average absorption of calcium by breast-fed infants to approximate 0.06 gm. (calculated as calcium oxid) per kilogram of body weight. This may be assumed likewise to be the requirement of infants receiving modifications of cow's milk. As a matter of fact, the average absorption of calcium oxid by healthy infants taking such diets has recently been found to average 0.09 gm. per kilogram.[1] Since, according to these investigations at the Babies' Hospital, New York, infants taking modifications of cow's milk absorbed on the average only about 45 per cent. of the calcium intake, it is necessary to provide for them a minimal intake of about 0.13 gm. of calcium oxid per kilogram to insure even the low average absorption of breast-fed infants. In general, the data correspond with the earlier calculations of Hoobler,[2] who estimated the requirement by an infant of 7 kg. at from 0.143 to 0.215 gm. of calcium oxid per kilogram of body weight. A pint of cow's milk furnishes nearly 1 gm. of calcium oxid.

According to the recent findings of Holt, Courtney and Fales, the best absorption of calcium was obtained when the calcium intake bore a definite relation to the fat intake, that is, when the food contained from 0.045 to 0.060 gm. of calcium oxid for every gram of fat, and when at the same time the fat intake was ample, not less than 4 gm. per kilogram. An excessive calcium intake apparently did not increase the calcium absorption, the excess being excreted. When the intake of calcium oxid was very low, less than 0.1 gm. per kilogram, the absorption of calcium oxid was less than the normal calcium requirement of the body. The total absorption of calcium oxid varied in general with the weight of the child; the absorption per kilogram did not vary regularly with either the age or the weight.

1. Holt, L. E.; Courtney, A. M., and Fales, H. L.: Calcium Metabolism of Infants and Young Children, and the Relation of Calcium to Fat Excretion in the Stools, Am. J. Dis. Child. **19**: 97 (Feb.) 1920.
2. Hoobler, B. R.: The Rôle of Mineral Salts in the Metabolism of Infants, Am. J. Dis. Child. **2**: 107 (Aug.) 1911.

It may come as a surprise to those who have been taught the interrelation between calcium and soaps in the stools that this was not found constant in these observations. The excretion of soap was directly related to the type of stool, that is, to the water content and to the reaction of the stool. The excretion of calcium was closely related to the calcium intake. As has been pointed out before, the calcium absorption was much lower when diarrhea was present. Furthermore, the calcium absorption by rachitic infants was much lower than that by healthy infants, and the administration of cod liver oil regularly increased the absorption of calcium, unless diarrhea was present. This is in accord with much accumulated clinical experience.

THE PREVENTION OF FOOD WASTE

One of the many lessons learned from the World War was the value of food conservation. For two years, during the war, the people of this country responded willingly to the efforts of the food administration, and there resulted a saving both of a vast amount of raw food materials and of large sums of money. This was accomplished not only through limitation in the use of various foodstuffs, but also through the elimination and prevention of waste. Today the cost of living has made necessary the institution of more careful methods of buying and using food, but apparently the importance of determining the food waste has been forgotten. When one considers that in a large civil institution the total garbage for one week amounted to 10,000 pounds, a large portion of which was edible food, it is readily seen that the prevention of a part of this food waste would mean the saving of an appreciable sum in dollars and cents.

Prevention of this loss is not impossible, as is shown by Irons,[1] who recently discussed the results of detection and prevention of food waste in some of our hospitals, where "waste of food does not usually result from deliberate intent to destroy, but occurs rather because of failure to recognize waste, and because the system of handling food takes too little acount of the needs, feelings and impulses of the ultimate consumer —the patient." Prevention of waste of necessity depends on its recognition. By a system of inspection and classification, the amount, character and source of the garbage can readily be determined, and the necessary waste separated from the unnecessary; and steps may then be taken to reduce or prevent this edible waste. In order to accomplish this, cooperation of the entire personnel is necessary, under adequate supervision of the persons in charge, who must be well acquainted with the patients, knowing many of their likes and dislikes, their needs and their peculiarities. The serving of good food on an attractive tray, soon after its preparation, and in amounts to suit the individual, will result in marked suppression of the edible waste. One method of accomplishing the latter is by stimulation of friendly competition among the various supervisors in the many wards.

How efficient such methods proved to be is shown by the fact that in one of our large base hospitals the average waste of edible food for each person daily was reduced in four months' time from 1.85 ounces to 0.15 ounce. In a civil hospital of about 400 beds, the total daily garbage was reduced in a short time from 743 to 357.8 pounds. This saving was accomplished mainly through improved methods of handling and serving food in the wards. Similar efforts in the serving of the occupants of private rooms resulted in but little reduction of the total garbage.

If results such as these can be obtained easily and in a short time, certainly there are many hospitals not managed so carefully that could reduce their expenses to a considerable extent by the institution of methods of waste prevention. Such a system of waste control should include, in addition to proper buying, preparation and distribution of food, methods of separation of waste at its source, so that responsibility for it may be determined, and friendly competition between the administration of ward units in the hospital be established. Waste control might profitably be extended to clubs, hotels and private homes, for, while the waste occurs under much different circumstances, it is often even more glaring than in hospitals, and with much less excuse.

1. Irons, E. E.: Detecting Hospital Food Waste, Mod. Hosp. **14**: 143 (Feb.) 1920.

Current Comment

CATS AND HUMAN DIPHTHERIA

It is a widely accepted belief that cats may suffer from diphtheria and convey the infection to human beings, but there appears to have been little or no exact experimentation on this question. Several observers, particularly in England, have reported finding true diphtheria bacilli in the throats of cats, but these observations for the most part were made several decades ago. The epidemiologic evidence connecting cats with human diphtheria is circumstantial and does not carry conviction, although some of the instances reported are suggestive of possible contagion. Savage has recently reexamined the whole subject.[1] He obtained uniform and definite results in experiments with young kittens. The implantation of vast numbers of diphtheria bacilli into the nasal cavities were ineffective in setting up any general or local lesions, and the same was true when massive doses were applied by throat swabbing. In point of fact, the bacilli not only failed to infect but survived for only a short period, usually disappearing within twenty-four hours. Savage's experiments not only do not support the view that diphtheria is a naturally occurring disease of cats,

1. Savage: J. Hyg. **18**: 448 (Feb.) 1920.

but suggest that the mucous membranes of the cat are peculiarly unfavorable to the growth and persistence of the diphtheria bacillus. Similarly, the alleged epidemiologic evidence as analyzed by Savage is regarded as quite valueless, and he concludes that the view that cats can suffer from a naturally acquired disease caused by the diphtheria bacillus is entirely without foundation. Consequently there is no ground for believing that cats can serve as carriers of diphtheritic infection.

INTERNATIONAL SCIENTIFIC TERMS

The editor of the *Nederlandsch Tijdschrift* has been appealing to the profession in his country to "purify" the language, and use Dutch terms instead of the foreign terms with which medical writings are now larded. He cites as examples "zenuwverzorging," and "zenuwknoopcel," which he would theoretically prefer to have used instead of "innervatie" and "ganglioncel," the terms now in vogue. He admits that the latter sound better to the present generation, trained in their use, and states that the efforts for "purification" of the language must have the future in mind, striving for better things in the rising generation. Trenchant comment on his reactionary views is a news item in the same issue relating that a German army physician at Namen in Belgium, during the German occupation, gave a prescription to the Belgian pharmacist to make up which called for "Hydrargyrum chloratum, 50 cg., 10 stück." The pharmacist supposed that mercuric chlorid was meant, and dispensed mercuric chlorid tablets in the legal form, that is, in a brown octagonal bottle labeled *Usage externe* and *Poison*. He wrote on the label besides, *Hydrargurum chloratum. . . . Sublimé corrosif*. The physician assumed that calomel had been dispensed, as he had ordered, and poisoning resulted. Calomel in German is hydrargyrum chloratum, while corrosive mercuric chlorid is hydrargyrum bichloratum. The pharmacist was accused of trying to poison the Germans, and was saved only by the Belgian chief inspector of pharmacies, Dulière, explaining the mistake. In connection with the affair, the latter has appealed for uniformity in the nomenclature of officinal drugs in all lands, and urges the appointment of an international pharmacopeia commission for the purpose. One of the dangerous pitfalls for pharmacists and translators is the term "calcium chloratum," which does not mean "calcium chlorate" but "calcium chlorid" in English.

IMPORTANCE OF CHANGES IN THE PLASMA IN HEMOLYTIC ANEMIAS

The fact that the origin of many forms of anemia is still wrapped in obscurity is indicated by the nomenclature of the disease. We still speak of idiopathic anemias or primary anemias, or else we describe certain forms of anemia by the name of the person who first recognized the particular type. In recent years it has been recognized that there is one special group of anemias associated with destruction of the red blood corpuscles and usually described as the hemolytic anemias. There are, of course, some forms of hemolytic anemia, particularly those varieties due to definite chemical poisons, the etiology of which is perfectly clear. On the other hand, there is a group of hemolytic anemias, of which the so-called "family jaundice" may be named as an example, wherein the method of action of the factors causing the hemolysis is still obscure. There are several possibilities in the method of production of abnormal blood destruction. It may be due to a normal mechanism acting on abnormally fragile corpuscles. It may be due to a hyperactivity of the normal blood-destroying function of the spleen. It may be due to substances in the plasma which either act as opsonins and render the red cells unusually susceptible to destruction or are themselves directly hemolytic. Gordon Ward [1] has attempted to group together a number of different blood syndromes which at first sight appear quite dissimilar, on the basis that all of them are due primarily to changes in the blood plasma rather than alterations in the blood-forming organs or in splenic blood destruction. The different conditions which Ward attempts to group together are the anemia of the family jaundice type; the anemia with sickle-shaped cells of Herrick; the condition described by Dresbach in which oval or elliptic cells occur in human beings; familial auto-agglutination, and the so-called Malin syndrome, in which anemia and splenomegaly are accompanied by the presence in the peripheral blood of large phagocytic cells. Ward's attempt to group these cases on the basis of similarity as regards their occurrence both as sporadic and as familial diseases, their intermittence in course, the fact that changes in the red cells peculiar to the disease occur and that all show plasma changes, is not entirely convincing. Nevertheless his article is an interesting and stimulating one, and calls attention to the necessity for more extended observations on the blood plasma in the anemias of this type.

AVOCADO FAT

Among the fruits that enter into the dietary of man the avocado, or alligator pear, takes an almost unique place because of its richness in fat. A few fruits may furnish a noticeable quota of real nutrients in the form of starch and, particularly, sugars; thus an ordinary sized banana is rated at a food value of 100 calories or more. But for the most part the fruits that enter into the ordinary regimen, however palatable, wholesome and dietetically valuable they may be, can scarcely be rated as significant sources of energy. The part that they play in nutrition must be estimated from other standpoints. Accordingly, an edible fruit that may exhibit as much as 20 per cent. of fat [2] in its make-up is worthy of special consideration. It may prove, for example, to become a valued adjuvant to the dietary of the diabetic, from which the carbohydrate content of many common fruits unfortunately excludes them. The possibilities of the avocado have been further promoted by recent investigations [3] in California and Washington, both of which agree in assigning an excellent utilization to avocado fat, even

1. Ward, Gordon: Proc. Roy. Soc. Med. (Sect. Med.) **13**: 1 (Nov.) 1919.
2. Condit, I. J., and Jaffa, M. E.: Bull. 254, California College Agr. Expt. Station, p. 381, 1915.
3. Mattil: Ann. Rep. California Avocado Assn., 93, 1916. Holmes, A. D., and Deuel, H. J., Jr: J. Biol. Chem. **41**: 227 (Feb.) 1920.

when as much as 124 gm. (about 4½ ounces) a day were consumed. Heretofore the market price of this fruit has prohibited a very widespread use of what now appears to be a nutritious as well as palatable food. The avocado is indigenous to tropical and subtropical regions in the western hemisphere; but it is being cultivated to an increasing extent in Florida and California, and may ultimately become available at more reasonable prices in harmony with the history of some other tropical fruits. Dietotherapy will testify that the enrichment of the dietary with a really palatable source of fat will not be unwelcomed in the management of certain nutritive disorders. Ordinary cream rarely exceeds the avocado in available fat content.

Association News

THE NEW ORLEANS SESSION

Special Arrangements for Golfers

The American Medical Golfing Association announces that entries will be received up to and including April 15 for the tournament to be held in New Orleans on Monday, April 26. The tournament fee ($1) must be deposited at the time the applicant submits his entry. His handicap must be approved by the handicap committee. Plans are being considered for engaging a summer hotel about a half mile from the golf course for the use of those who desire to be lodged near to the course. In order to obtain a reservation at this hotel, it is advisable to telegraph to Dr. John B. Elliott, Jr., 931 Canal Street, New Orleans, chairman of the golf committee, advising what space you would like to have. The consummation of the plan will depend on the demand for these accommodations. Address enrolment, entries and handicaps to the Secretary of the American Golfing Association, Dr. Will Walter, 1414 Chicago Avenue, Evanston, Ill.

Health Sunday

Governor Pleasant, without proclamation, has designated the setting aside of Sunday, April 25, as health Sunday for Louisiana. This is the Sunday preceding the Annual Session of the American Medical Association in New Orleans.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Physician Taken to Prison.—Dr. George W. Alverson, Macomb, who was sentenced to life imprisonment in connection with the death of Lawrence Clugston, is said to have been taken to the state penitentiary, Joliet, March 16.

Municipal Venereal Disease Clinic.—The city council of Peoria, March 2, unanimously provided an ordinance for the establishment of a municipal clinic for the treatment and isolation of venereal diseases. The ordinance provides for a commissioner of the dispensary with a salary of $3,000 a year and with authority to declare quarantine if certain phases of the ordinance are not observed.

Hospital Notes.—The two-week drive for the Victory Hospital at Waukegan, which has been carried on under the leadership of Hon. C. C. Edwards, came to a close, March 22, with a total contribution of $300,000. The institution, which will be for soldiers and sailors, will, it is said, be erected within two years.——The contract has been let for the erection of a new modern hospital for the Cunningham Deaconess Home, Urbana.

Speedway Hospital.—Contracts have been signed turning over the Speedway Hospital to the U. S. Public Health Service. Congress has appropriated $3,500,000 for the acquisition of this plant and $1,500,000 in addition will probably be required before the institution is completed. The hospital site includes 320 acres, and the buildings are fireproof. The main building is 2,040 feet in length, 50 feet in width and four stories in height, and will accommodate between 2,000 and 2,500 patients. The institution will be completed within four months and will be known as the Broadview Hospital.

Chicago

Indicted for Failure to Report Disease.—Dr. Anna Sorna is said to have been indicted by the grand jury, March 18, for failure to report a case of scarlet fever.

Grenfell in Chicago.—Dr. Wilfred T. Grenfell, the medical missionary to Labrador, with Mrs. Grenfell, was a visitor in Chicago last week, and spoke at St. Chrysostom's Church and at the community house in Winnetka, March 21.

Midwives Fined.—Mrs. Wanda Grzybowski was fined $25 and costs, March 16, for failing to apply silver nitrate to the eyes of a new-born babe, and for failing to report the birth.——Mrs. Kate Kijowska was fined $15 and costs for a similar offense.

Midwife Freed of Charge.—Mrs. Catherine Schmidt, a midwife, was released from police custody, March 6, after having been held for two weeks in connection with the death of Mrs. Grace D. Frey, who died, February 24, supposedly as the result of a criminal operation.

Health Commissioner to Open Hospital.—Health Commissioner John D. Robertson announces that he will open a new charity hospital, April 1, with accommodation for twenty patients. This hospital will also afford means by which nurses may obtain a training course in three months. This will be conducted in the City School for Home and Public Health Nursing at Fulton and Ada streets. A charge of $50 will be made for the course.

Robert Koch Society Meeting.—The thirtieth annual meeting of the Robert Koch Society for the Study of Tuberculosis was held, March 25, at the City Club. Dr. Benjamin H. Orndoff spoke on "The Peritoneoscope in Diagnosis of the Diseases of the Abdomen"; Dr. Max Biesenthal discussed the "Use of Sodium Gynocardate 'A' in Pulmonary Tuberculosis," and Dr. James A. Britton spoke on "Occupation and Tuberculosis."

Relief for Suffering Vienna Physicians.—At a luncheon given by the Chicago Medical Society and affiliated organizations, March 15, the sufferings of the wives and families of Vienna physicians were detailed by Dr. Carl Beck, and a committee was appointed to solicit funds. The personnel of this committee is Dr. Rudolph W. Holmes, chairman of the committee of the specialist societies; Dr. Coleman G. Buford, chairman of the branch societies of the Chicago Medical Society; Dr. Effie L. Lobdell, chairman of the Chicago woman's medical societies and clubs, and Dr. Warren Johnson, chairman of the club and social associations. A contribution of $1,000 by Mrs. Catherine McCormick was announced by the association.

INDIANA

Fire Destroys Sanatorium.—The Mudlavia Springs Hotel and Sanitarium has been completely destroyed by fire. It was established in 1889 and had a capacity for 200 patients.

Venereal Disease Clinic Reopened.—The Fort Wayne Venereal Clinic reopened, February 23, in its quarters on the second floor of the Wayne pharmacy building with Dr. George Rea and a registered nurse in charge.

Public Health Association Election.—At the annual meeting of the Logansport Public Health and Welfare Association, March 9, Dr. John A. Little was reelected president; Mrs. W. J. Ballard and Mrs. Willard Wynne were made vice presidents; Mrs. William A. Gremelspacher was elected secretary, and C. W. Graves, treasurer.

War Histories of Medical Officers Wanted.—The Indiana Historical Commission is now engaged in collecting and compiling the official war history of the state and has entrusted to Post 26, Indiana Branch, the American Legion, the duty of preparing a complete military history of the physicians of Indiana who were in the service. All Indiana physicians who were in service are requested to write imme-

diately to Dr. John R. Newcomb, Commander, Post 26, American Legion, Indianapolis, for proper blanks on which to file their military records.

IOWA

Tuberculosis Clinic Established.—A tuberculosis dispensary clinic has been opened at the community hospital, Grinnell, under the care of Dr. Edwin E. Harris, secretary of the hospital staff. The clinic will be at the disposal of the American Red Cross for use during the tuberculosis survey. ——A free child welfare clinic has also been established at the hospital.

Personal.—Dr. Enos D. Miller, Wellman, suffered a fracture of two ribs and other injuries when his automobile backed down a hill and went into a creek, March 11.——Dr. Oscar A. Dahms has been reelected president of the Davenport school board.——Dr. Charles F. Applegate, superintendent of the Mount Pleasant State Hospital, has been appointed medical superintendent of the Norwalk State Hospital, Norwalk, Calif., and assumes his new duties April 1.

KENTUCKY

Hospital Purchases Y. M. C. A.—Madisonville Hospital Association has purchased the Y. M. C. A. building with the idea of making improvements and using it as a hospital.

Suit Settled.—Under terms of a settlement said to be $1,000, the damage suit for $30,000 brought by Mrs. Francis Jarnigan against Dr. Alex. C. Foster, Owensboro, has been dismissed.

Personal.—Dr. Thomas D. Moore, Hopkinsville, has been appointed to a fellowship in general medicine with the Mayo Foundation, Rochester, Minn.——Dr. John H. Hamilton, Owensboro, has been appointed full-time health officer of Davies County.

Venereal Quarantine.—A joint federal, city and county quarantine and sanatorium for the women now quarantined in the county jail, has been arranged for at the Louisville City Work House. Reduction in the number of prisoners from 250 before July 1 to fifty at the present time makes this possible. Sixteen to thirty women are constantly under segregation and treatment. Every effort to effect the moral and social regeneration of the women will be made.

Alumni Association Progress.—As a result of a concerted effort to reorganize the Alumni Association of the University of Louisville Medical Department, more than 1,000 graduates have been enrolled. Elaborate plans are being made for a meeting during commencement week, May 31 to June 5, when clinics and entertainments will be held. The clinics will consist of operative clinics at all of the hospitals; bedside clinics and ward walks; demonstrations in laboratory methods of diagnosis, lectures, etc. Over four hundred are expected to attend. The 1920 graduating class will be guests of honor at a banquet.

LOUISIANA

Office Building for Physicians.—A three-story office building to be used exclusively by physicians and dentists will be built at the corner of Prytania and Delachaise streets, New Orleans, across the street from the Touro Infirmary. The building will represent an investment of $150,000.

Parish Physicians Meet.—At the annual meeting of the Lafourche Parish Medical Society held in Thibodoux, March 15, Dr. Joseph M. Hubert, Allemands, was elected president, Dr. Ewell A. Kleinpeter, Thibodoux, vice president, and Dr. Philip J. Dansereau, Thibodoux, secretary-treasurer.

Personal.—Dr. Alexander R. Crebbin, New Orleans, has sailed from London for New York.——Dr. Elizabeth D. A. Cohen, New Orleans, who has been for thirty years at the Touro Infirmary celebrated her hundredth birthday, February 22.——Dr. Guy A. Darcantel has been appointed a member of the municipal health board of White Castle.

License Refused.—The refusal of the state board of medical examiners to reissue a license to practice to Dr. Antonio B. Jannarelli, New Orleans, is said to have been upheld in the civil district court, March 8, when the physician's suit to compel the board to license him was dismissed by Judge Parker.

Appropriation for Health Work.—The appropriation committee of the Senate has allowed $200,000 for the rat-proofing work which the U. S. Public Health Service is conducting in New Orleans.——The state council of defense has approved the recommendation of the executive council for the appropriation of $10,000 for the state board of health for use in the campaign against venereal disease and of $6,000 to combat bubonic plague.

MAINE

Personal.—Dr. Ludovic J. Dumont has been appointed health officer of Lewiston for three years, and the local board of health has been abolished.

Laboratory Soon to Be Opened.—The Aroostook branch laboratory of the state department of health at Presque Isle will soon be opened and will be in charge of a trained chemist and bacteriologist. In this laboratory, tests for typhoid fever, diphtheria, and tuberculosis and also examinations of water will be made.

MARYLAND

Libraries to be Consolidated.—According to plans now under consideration by the authorities at Johns Hopkins University, the libraries of the hospital, the school of hygiene and the medical school will be collected under one roof, in a new library building to be erected in the hospital group.

Osler Memorial Meeting.—A memorial meeting to the late Sir William Osler, regius professor of medicine at Oxford University, and for many years professor of medicine at the Johns Hopkins University, was held March 22, in the civil engineering building, Johns Hopkins University. President Frank J. Goodnow presided, and addresses were made by Henry Van Dyke, D.D., and Prof. William H. Welch.

Personal.—Dr. John M. T. Finney, Baltimore, has been elected an honorary fellow of the Royal College of Surgeons, England.——Dr. James A. Nydegger, Baltimore, in charge of the U. S. Public Health Service in Baltimore, has announced the addition of two physicians to the staff. Dr. George Walker has been appointed consultant neurologist and Dr. George Lane Taneyhill, Jr., neuropsychiatrist.——Dr. Ross McC. Chapman, chief executive officer of St. Elizabeth's Hospital, Washington, D. C., who has been appointed medical superintendent of the Sheppard and Enoch Pratt Hospital, will assume his new duties April 1.

Movement Launched for New Municipal Hospital.—A movement to have Baltimore take over the hospital at Fort McHenry for a general municipal hospital as soon as the War Department gives it up has been launched. Through a petition handed the mayor, the Baltimore City Medical Society has asked that hospital facilities for Baltimore city be provided as quickly as possible and endorsed the acquisition by the city of the hospital at Fort McHenry, if this could be effected. Dr. John M. T. Finney, Baltimore, has been named by the mayor as chairman of a committee to lay the plan before the Secretary of War and the Surgeon-General of the Army. It is said that this transfer could be made by July 1, provided the plan is put through at once. The only obstacle seen is a possibility that the U. S. Public Health Service may need the hospital for its war risk insurance work. This phase of the situation will be looked into by Dr. Finney and his committee. In the event that the Fort McHenry Hospital is acquired by the city, Sydenham Hospital, the city hospital for infectious diseases, will probably be put to other use.

MASSACHUSETTS

Animal Tuberculosis.—At the request of the mayor, of the director of public health and charities and other officials of Lawrence, Dr. E. A. Crossman of the Bureau of Animal Industry, Department of Agriculture, delivered an address, February 25, before the citizens of Lawrence and vicinity on "The Tuberculous Cow, a Menace to Public Health."

Personal.—Dr. George Forrest Martin, Lowell, has been nominated as a trustee of the state infirmary, succeeding Leonard Huntress, deceased.——Dr. William Hall Coon, Haverhill, has accepted a position of health commissioner in Bridgeport, Conn.——Dr. Otis P. Mudge has been elected a member of the board of health of Amesbury.

MICHIGAN

Hospital Burns.—The Red Cross Emergency Hospital at Mount Pleasant was recently destroyed by fire.

Medical Building Association Organized.—Twenty-five physicians and dentists of Flint have incorporated the Flint Medical Building Association for the purpose of erecting a six-story building to be devoted exclusively to the use of members of these professions.

Personal.—Dr. Mary J. Erickson, Newberry, has been placed in charge of the research work of the Iowa state board of health under the recent appropriation of the federal government for investigation in the field of venereal disease and has commenced her work at the University of Iowa, Iowa City.——Dr. Herbert L. Wright, city health director of Lansing, has resigned, his resignation to take effect March 15. He has been appointed director of a department of the state board of health of Texas, with headquarters at Austin.

MINNESOTA

Personal.—Dr. Charles H. Mayo, Rochester, has been elected an honorary fellow of the Royal College of Surgeons, England.——Prof. Frank C. Whitmore of the University of Minnesota has succeeded Prof. Harry A. Curtis as professor of organic chemistry in Northwestern University, Evanston, Ill.

MISSOURI

Dinner to Dr. Bowen.—The roentgenologists of St. Louis gave a dinner, March 23, in honor of Dr. Charles F. Bowen, Columbus, Ohio.

Health Center for Women.—Dr. Eva M. Blake, New York City, arrived in St. Joseph, March 8, and spent a week in cooperation with the Y. W. C. A. in establishing a health center for women. Public meetings of women of all ages were held during the week and intensive health work was done.

Salary Increase.—Taking advantage of an act of the last legislature conferring authority on the governor and state auditor, these officials have increased the salaries of the superintendents of state insane hospitals $50 a month, and have extended the same increase to the superintendents of the State Sanitarium for the Treatment of Incipient Tuberculosis, Mount Vernon, and the superintendent of the Missouri Colony for Feebleminded and Epileptics, at Marshall. The physicians at these institutions will also have an increase in salary of $300 a year.

Personal.—Dr. Eugene Lee Myers, formerly professor of otorhinolaryngology at the St. Louis College of Physicians and Surgeons, is no longer connected with that school.——Dr. Ulysses F. Kerr, Springfield, has been appointed deputy commissioner of health of Greene County.——Dr. Edward E. Mansur, Jefferson City, was operated on, February 21, at St. Mary's Hospital for appendicitis and has made a good recovery.——Dr. Frederick E. Woodruff, St. Louis, has been appointed chairman, and Dr. John Green, Jr., St. Louis, secretary of the consulting staff of oculists of the Missouri Council for the Blind.——Dr. Walter J. Hansen, St. Joseph, formerly county physician of Buchanan County has been appointed deputy state health commissioner.——Dr. G. Canby Robinson, dean of Washington University Medical School, St. Louis, has resigned to accept the position of dean and professor of medicine in Vanderbilt University, Nashville, Tenn.

NEW YORK

State May Buy Radium.—A bill known as the Gibbs bill is before the legislature which authorizes an appropriation of $250,000 for the purchase of 100 grains of radium. It is understood that the state finance committee will recommend this purchase. The radium will be for use in the State Institute for the Study of Malignant Disease, Buffalo.

Health Insurance Bill in Legislature.—Senator Frederick M. Davenport, Oneida, recently introduced a health insurance and public welfare bill into the legislature. In introducing the bill Senator Davenport said he would not urge its adoption at this session until "the hidden and selfish purpose behind the organized and powerful propagandism and lobbying of certain purely business groups opposed to health insurance could be disclosed." He believes that at present an honest opinion on the merits of the principle cannot be obtained inside the realm of industry. The bill now introduced is somewhat less wide in its scope than that of last year and applies to those employed persons who are defined as industrial workers under the existing workmen's compensation act. Senator Davenport asserts that this bill is not state insurance at all and that there is no state fund.

New York City

Encephalitis Epidemic.—Since January 1, about 175 cases of encephalitis lethargica have been reported in New York. This apparently followed the influenza epidemic and has caused forty deaths since the beginning of the year.

Harvey Society Lecture.—The eighth of the series of Harvey Society Lectures given by Dr. William McKim Marriott, professor of pediatrics in Washington University, St. Louis, at the New York Academy of Medicine, March 27, is on "Some Phases of the Pathology of Nutrition in Infancy."

Department of Public Charities Changes Name.—Mayor Hylan has approved the bill recently passed by the legislature amending the city charter so that the department of public charities hereafter will be known as the department of public welfare. The reason for this is that the name "public charities" had come to be a burden to the department. Commissioner Coler of this department announces that, owing to the influence of prosperity, prohibition and wood alcohol, the maintenance of the municipal lodging house is no longer necessary.

Nightingale Centennial.—Among the features of the celebration to commemorate the hundredth anniversary of the birth of Florence Nightingale will be the inauguration of a campaign to recruit 30,000 young women in training schools for nurses and the award of a prize of $500 for the best three act play by an American author based on incidents in the life of Florence Nightingale. Pageants, public meetings, and formal ceremonies will be held on the anniversary date, May 12, in which nursing organizations, women's clubs and colleges will cooperate.

NORTH CAROLINA

Personal.—Dr. John M. Manning, Durham, has been appointed state medical examiner for the Modern Woodmen of America.

State Society Meeting.—The annual meeting of the Medical Society of the State of North Carolina will be held in Charlotte, April 20 to 22, under the presidency of Dr. John P. Munroe, Charlotte.——The North Carolina Hospital Association will hold its annual meeting in Charlotte, April 19.

County Hospitals Advocated.—The bulletin of the University of North Carolina in a recent issue carries a report to the university club strongly advocating a system of county hospitals owned and operated at public expense as a statewide system, logically urging that only by public support through systematic taxation can the hospitals be freed from the everlasting grind and strain for funds adequate for maintenance, and also that only by such a system can all the people and property be caused to carry their proper burden of the care of the sick.

OHIO

Hospital Donated to Town.—Charles F. Kettering, a millionaire inventor and manufacturer of Dayton, has donated a hospital to Loudenville.

Hospital Plans Approved.—The city council of Youngstown, March 1, approved the original plans of the Youngstown Municipal Hospital to cost $620,000.

Scarlet Fever in Cleveland.—Dr. Harry L. Rockwood, city health commissioner of Cleveland, announces that there are about 400 cases of scarlet fever scattered about the city, and that the disease is epidemic in the state and especially in Cincinnati, Columbus and Toledo.

Fires in Epileptic Hospital.—A fire, March 9, destroyed one cottage and the dancing pavilion of the Ohio Hospital for Epileptics, Gallipolis. Eight patients are dead and two, who were injured, are expected to die. Twenty-five patients were in the cottage at the time. March 10, the hospital was again set on fire. No clew to the incendiary has been found.

Health Commissioners Organize.—A permanent organization of the county health commissioners of the northern district of Ohio was made at a meeting held in Canton, March 10, at which ten of the thirteen counties of the district were represented. Dr. K. N. Schwartz, Lisbon, was made president of the new organization and Dr. Chester M. Peters, Canton, secretary. The association will meet once a month.

Academy Activities.—March 5, Dr. George Walker, Baltimore, formerly colonel, Urological Division, M. C., U. S. Army, delivered an address before the Academy of Medicine in Cleveland on "Abolition of Venereal Disease by Medicinal Prophylaxis."——February 20, Dr. Carl A. Hedblom, Rochester, of the surgical division of the Mayo Clinic, Rochester, delivered an address on "Treatment of Chronic Empyema."——At the March 19 meeting of the academy, Dr. Harry G. Sloan, Cleveland, spoke on "Gas Cysts of the Intestine," and Dr. John Phillips, Cleveland, on "The Effort Syndrome."

Personal.—Dr. Roy L. Pierce, Mount Gilead, has resigned as health commissioner of Morrow County, as no funds were available to carry on the work.——Dr. John H. Elias, Murray City, has been elected health commissioner of Hocking County.——The home of Dr. Paul J. Hanzlik, Cleveland, assistant professor of pharmacology in Western Reserve University was entirely destroyed by fire, February 11. Dr. Hanzlik and his wife sustained burns and other injuries from which they are recovering.——Dr. Presley C. Ramsey, Alliance, has been appointed city health commissioner. ——Dr. Charles R. Keyser, Van Wert, has been elected health commissioner of Van Wert County.——Dr. William L. Dick, Columbus, will continue as acting city health officer and medical inspector of Columbus.——Dr. John T. McVey of the staff of the Ohio Hospital for Epileptics, Gallipolis, has been made a member of the staff of the Massillon State Hospital.——Dr. Roy K. Evans, McGuffey, has been selected health commissioner of Hardin County.——Dr. H. H. Pansing, Miamisburg, has been appointed health commissioner of Montgomery County.

OKLAHOMA

Shortage of Physicians.—Dr. Arthur A. Lewis, Oklahoma, state health commissioner, reports a serious shortage of physicians in the small towns in Oklahoma.

Personal.—Dr. James S. McFadin, Hollis, was struck and injured by a cab, March 3.——Dr. Virgil Berry, a pioneer practitioner of Okmulgee, announces his retirement from active practice.——Dr. William A. T. Robertson has been elected president of the Ponca City Medical Association.

Hospital Unveils Tablet.—The Sisters of St. Francis of St. Anthony's Hospital at Oklahoma City have recently unveiled a bronze tablet in memory or Major Robert Lord Hull and Capt. Frank Bruner Sorgatz, both of whom lost their lives in the military service during the influenza epidemic last winter.

PENNSYLVANIA

Personal.—Dr. Iden M. Portser, Greensburg, has resigned as a member of the state board of health.

State Health Organization Planned.—William J. Crookston, Pittsburgh, associate chief medical inspector of the department of health, outlined a plan at a recent conference of the field force of the department, whereby the state will be organized by counties for health education and preventive work and emergency service.

Physicians Indicted.—Dr. J. Newhall Kirk, Philadelphia, directing head of the "Associated Doctors," and two other physicians, Dr. Guy V. Payne and Dr. Grant F. Hartzell, are reported to have been indicted, January 27, charged with conspiracy to defraud. Dr. Payne is reported to have been indicted also for practicing medicine in Maryland without a license. The report states that Dr. Kirk is accused also by the Philadelphia authorities of violating the Pennsylvania law prohibiting the advertisement of cures and treatment for specific diseases and that on this charge he was held in $5,000 bail.

Philadelphia

Personal.—Dr. Lawrence F. Flick was awarded the Laetare medal for 1920 by the University of Notre Dame, Ind., March 13. The honor is regarded as one of the highest that can be conferred on any Catholic layman in America and is for "distinctive service in behalf of God, church and country." ——Dr. Thomas A. Shallow, chief physician of the medical department of the municipal court, will hereafter sit with the judge to give the benefit of an expert medical opinion at the regular Wednesday juvenile court hearings.

Medical Co-Eds Opposed.—On the ground that valuable parts of the courses have to be omitted lest they offend the sensibilities of the women, students and professors at the Medical School of the University of Pennsylvania are demanding the exclusion of co-eds from medical class rooms. A petition presented to Provost Smith and Dean Pepper has been referred to the board of trustees for action. The students and some of their instructors say women who desire to study medicine should go to a women's medical college.

UTAH

Personal.—Dr. James M. Elliott has been named as sanitary inspector and member of the board of health of Ogden, succeeding Mr. George Shorten.——Dr. Willard Christopherson has succeeded Dr. Samuel G. Paul as head of the city board of health of Salt Lake City.

VIRGINIA

Personal.—Dr. William F. Reasner, Portsmouth, who has served as health director of Norfolk County, has gone to Minneapolis to become assistant director of the health department of that city.——Dr. C. Curtis Hudson, Richmond, has been appointed chief health officer for Richmond.

Surgeon at Penitentiary.—The house committee on prisons and asylums has reported favorably a bill providing for a surgeon-general at the state penitentiary with a salary of $3,000 a year, whose time is to be devoted entirely to prison work. He will exercise supervision over all surgical and medical work at the state prison, state farm and convict road camps.

Health Campaign Opened.—Halifax County last month launched a twelve-month sanitation unit under the charge of Dr. Walter A. Newman as field director. One half the expense of this work will be borne by the county and the remainder jointly by the state department of health and the international health board.——The result of the year of intensive health work just closed in Fairfax County has been so successful that the county has determined to continue the work at its own expense and has appointed Dr. Edward L. Flanagan, Fairfax, to continue as field director.——Albemarle County is preparing for a similar health crusade.

CANADA

Personal.—Dr. Arthur Doull, Halifax, D.P.H., has been appointed provincial inspector of health for Nova Scotia.—— Dr. Allan C. Rankin, Edmonton, director of laboratories of the provincial department of health, Alberta, has been made dean of the medical faculty of the University of Alberta, Edmonton, Alta.——Dr. John J. Ower, Montreal, has been appointed professor of pathology in the medical faculty of the University of Alberta.——Dr. Arthur C. Jost, Guysborough, has been appointed provincial medical officer of health for the eastern health division of Nova Scotia.——Dr. John P. Brown, Toronto, D.P.H., has received an appointment in the dominion government quarantine service and has been assigned to duty at the quarantine station, St. John, N. B.

GENERAL

Anesthetists to Meet in New Orleans.—The American Association of Anesthetists will hold its eighth annual meeting at the Hotel Grunewald, New Orleans, April 26 and 27, under the presidency of Dr. Albert H. Miller, Providence, R. I. The annual dinner will be held on the evening of April 26.

Proctologists to Meet.—The twenty-first annual meeting of the American Proctologic Society will be held in Memphis, Tenn., April 22 and 23, under the presidency of Dr. Collier F. Martin, Philadelphia. The society will be the guest of Dr. John L. Jelks, and of the Memphis and Shelby Medical Society with headquarters at the Hotel Gayoso.

Medical Intern Wanted.—The United States Civil Service Commission announces that an open competitive examination will be held for the position of medical intern in St. Elizabeth's Hospital, Washington, D. C., with a salary of $1,200 a year and maintenance. Appointees whose services are satisfactory may be allowed a temporary increase of $20 a month, granted by Congress.

Biography of Sir William Osler.—Dr. Harvey Cushing, Peter Bent Brigham Hospital, Boston, has been requested by Lady Osler to prepare a biography of Sir William Osler. He will be grateful to any one who will send him either letters or copies of letters, or personal reminiscences, or information concerning others who might supply such information. It is requested that a copy of all letters, no matter how brief, be sent, and that the dates be supplied whenever possible. If originals are forwarded they will be promptly returned by Dr. Cushing.

Coal Mine Fatalities.—Complete report of fatal accidents in coal mines during 1919 indicates a reduction of 273 fatalities, or 10.58 per cent., as compared with 1918, according to a statement issued by the United States Bureau of Mines. The decrease was noted mainly in accidents from mine cars and locomotives and in surface accidents, while increases are recorded in accidents due to gas and dust explosions and also explosives. While the actual number of deaths is con-

siderably less than in 1918, the ratio on the basis of tons of coal mined and number of working days is slightly higher.

Anesthesia Research.—At the meeting of the board of governors of the National Anesthesia Research Society held in Cleveland this month, it was voted that the annual convention of the society be held at Pittsburgh during the week of October 4, in conjunction with the meeting of the Interstate Anesthesia Association and the Medical Society of the State of Pennsylvania. The governors voted $200 to be apportioned in prizes for the best papers on research in anesthesia, and a committee was also appointed to prepare forms for uniform anesthesia charts.

Fraternity Favors Public Health and Sanitation Department.—At the recent convention of the Alpha Kappa Kappa Medical Fraternity, at Chicago, the following resolution was passed:

WHEREAS: The various industries, professions and labor of these United States have received official recognition, by the establishment of representatives in the President's cabinet: and

WHEREAS, The medical profession is not in any way recognized as a whole, but considered a part of the various departments; be it therefore:

Resolved, That the twentieth convention of Alpha Kappa Kappa Medical Fraternity does go on record as being in favor of the creation of a department of public health and sanitation, with a representative on the President's cabinet. Be it further:

Resolved, That a copy of this resolution be sent to the President of the United States, and the President of the American Medical Association.

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian Hospital, Chicago, and Evanston, Ill., Hospital, each $25,000 by the will of Frank H. Armstrong.

Presbyterian Hospital and New York Hospital, New York City, each at least one million dollars by the will of Charles D. Thompson.

Middlesex Hospital Medical School, London, $100,000 for the endowment of a chair of physics by Messrs. J. B. and S. B. Joel.

Presbyterian Hospital, Philadelphia, $40,000 for the endowment of a bed available after the death of his mother and two sisters, by the will of Robert Wilson.

Howard University, Washington, D. C., a gift of $250,000 for endowment fund by the Rockefeller Foundation.

Milwaukee Associated Charities, Milwaukee Children's Hospital, and Marquette University, Free Medical Dispensary, Milwaukee, each one third of the annual cash income of $10,868 from the estate of Helene M. Cudahy.

Vanderbilt Clinic of the College of Physicians and Surgeons and Presbyterian Hospital, Tuberculosis Clinic, New York City, each $9,000; New York Association for Improving the Condition of the Poor,—Home Hospital, New York City, $8,000; Loomis, N. Y., Sanatorium, and Trudeau, N. Y., Sanatorium, each $3,000; Stonywald Sanatorium, Lake Kushaqua, N. Y., $2,000; Hospital and House of Rest for Consumptives, Inwood, N. Y., $1,000, and Henry Street Settlement for Tuberculosis Nursing, New York City, $500, donations made at the annual meeting of the trustees of the East River Homes Foundation.

FOREIGN

Personal.—Prof. Hugo Fuchs, professor of anatomy at the University of Königsberg, has been transferred to the University of Göttingen, succeeding Professor Merkel.

Honorary Degree Conferred on Hoover.—The University of Cracow, Poland, has conferred the honorary degree of Doctor of Medicine on Mr. Herbert Hoover for services rendered to Poland.

Osler Institute to Be Established.—At a public meeting held March 7, at Oxford University, it was decided to establish the Osler Institute of General Pathology and Preventive Medicine as a permanent memorial to the late Sir William Osler.

Appropriation for East African Hospital.—The United States consul at Lourenco Marques, Portuguese East Africa, reports that the local government has authorized a special loan of $194,660 for electrotherapy, hydrotherapy and radiotherapy at the Hospital Miguel Bombarda of that city.

Second Centennial of Death of Lancisi.—A meeting in honor of the memory of the Italian physician and anatomist, G. M. Lancisi, who died in 1720, was held recently at Rome in the Lancisi library. Senator Marchiafava delivered the main address. Professor Lancisi is known by the nerve of Lancisi and his numerous published works, including the history of five great epidemics in Italy.

Seeks Relief for Germans.—Dr. O. Edward Janney, Baltimore, representing the American Friends Service Committee for the relief of suffering children in Germany is organizing citizens' relief committees to raise money for this work. One million dollars worth of supplies have already been sent to Germany by the committee and in the next three months $12,000,000 will be needed. The committee has already thirty relief workers in Germany.

Red Cross in Charge in Esthonia.—The American Red Cross Commission at Reval, Esthonia, has been invested with authority to take any measures, political or economic, to stamp out the epidemic of typhus fever raging there, to put the country under strict quarantine, to interdict travel and to enforce any other measures which may be deemed necessary by Lieut.-Col. Edward J. Ryan, chief of the commission.

Practice in Norway.—The *Deutsche medizinische Wochenschrift* states that the medical faculty of the University of Christiania has recommended that foreign physicians be allowed to practice in Norway provided that they locate at points where there is a pressing demand for physicians. The journal adds, "This seems to indicate that there is a scarcity of medical men in the rural districts of Norway."

Death of Morelli.—Prof. Enrico Morelli of Rome, who with Baccelli and Durante founded the *Policlinico* twenty-seven years ago, died February 13. He gave up most of his practice and his teaching to devote his energies to this leading medical journal which has always taken a high stand in science and in promoting the best interests of the profession. He was editor and manager both of the weekly practical section and of the monthly medical and surgical sections.

LATIN AMERICA

Influenza in Mexico.—The authorities announce that the influenza epidemic has come to an end. The number of deaths this year was 1,649, while last year there were more than 3,000.

Department of Health in Santo Domingo.—According to a measure approved by the military authorities, a department of public health and charities has been created in Santo Domingo to have complete charge of these matters.

Encephalitis Lethargica in Mexico.—There has been a case of encephalitis lethargica in Mexico City. The patient was taken as insane to the asylum, where the diagnosis was made. Other cases have occurred at Monterey and Laredo.

Sanitation Works in Peru.—A bill now pending in the Peruvian senate empowers the president to enter into contracts for the execution of the work necessary to provide Lima and thirty other cities with safe water, drainage, garbage disposal works, etc. The improvements contemplated involve an expenditure of several millions of dollars.

Quarantine Station in Colombia.—A recent law appropriates 30,000 pesos for the construction of a quarantine station and a hospital in the port of Riohacha. Eight thousand pesos are also provided to build a water works system, and an annual appropriation of 5,000 pesos for each milk station that may be established in the capitals of any of the different departments.

New Medical Journal in Central America.—Under the editorship of Dr. Rodolfo Espino, there has been founded in Managua, Nicaragua, a new medical journal, entitled *Revista de la Asociación Mèdica Centroamericana*. Its avowed purpose is to promote the union of the medical profession of the five Central American countries, and a medical congress, which will be held, Sept. 15, 1921, on the anniversary of the independence of the five republics.

Deaths in the Profession.—Dr. **Manuel Pérez,** director general of the public health service of Paraguay, delegate to various international medical congresses, and professor in the medical school at Asunción while it existed, aged 39.——Dr. **F. C. de Sá Ferreira,** the dean of the psychiatrists in charge of the insane of the Rio de Janeiro district, aged 77.——Dr. **Antonieta Dias Morpurgo,** a leading woman physician and pediatrist of Rio de Janeiro, aged 49.——Dr. **G. A. de Carvalho,** also of Rio, aged 70.

Personal.—Dr. Bernardo Etchepary, a prominent physician of Uruguay, who came to this country to conduct scientific studies on behalf of the Board of Health of Uruguay, has returned to his country, accompanied by his wife and son. While here, Dr. Etchepary visited the most important eastern cities.——Prof. P. Pereira, professor of histology at the University of Bahia and director of the *Gazeta Medica da Bahia*, was recently elected honorary member of the Academia Nacional de Medicina, on the fifty-third anniversary of his entering on his professional career.——Dr. J. Moreira da Fonseca of Rio de Janeiro was elected by the same Academia to the post left vacant by the death of Dr. Miguel Pereira. His address was on suprarenal insufficiency in influenza.

Government Services

Aeroplane Ambulances

Orders have been received to redesign and construct four DH-4 aeroplanes into models for ambulance purposes. Each machine will have accommodation for pilot, and two patients set in ship horizontally on Stokes Navy litters.

Health Conditions in the Army

The health of the troops continues excellent. A few cases of influenza appear, but in decreasing numbers. Measles is increasing in a few stations, twenty-two cases being reported from Camp Upton and fifteen new cases from Camp Knox. The admission and noneffective rates are as low as expected under normal conditions. Health conditions among troops in Germany and Siberia remain about the same.

Construction Work in Hospitals

In House Bill 8819, signed by the President, February 28, which provides for the purchase of property and certain construction for military purposes there appears a clause that "no provision contained in army appropriation act for June 11, 1919, be deemed or construed to prohibit the expenditure of the appropriation of $350,000 made therein for the purchase of land contiguous to the Walter Reed General Hospital, 26.9 acres more or less, and the acquisition of so much of said acreage for the amount appropriated as the Secretary of War in his discretion may deem to be in the public interest."

Citation for Service

Col. Charles F. Morse, M. C., U. S. Army, has been awarded the Distinguished Service Cross for exceptional meritorious and distinguished services "as director of the veterinary corps, by diplaying exceptional energy, zeal and good judgment he organized and administered with marked success a veterinary service capable of meeting every need in home territory and in the theater of operations. He provided effective means for the treatment of sick and wounded animals and for the prevention of disease among well animals, for the inspection of meat and dairy products used by the army, and, through establishment of schools of instruction, placed the personnel of the veterinary corps of the Army on a high plane of efficiency."

Citations by King for Medical Corps

The king of England has ordered certificates issued in the following form to Cols. Christopher C. Collins; George W. Crile, Cleveland; Harvey Cushing, Boston; Mathew A. DeLaney; Robert U. Patterson; Harry L. Gilchrist; James D. Fife; Richard H. Harte, Philadelphia, and Lieut.-Col. Lucius L. Hopwood, M. C., U. S. Army, and to Miss Julia Stimson, superintendent of the nurses of the Medical Department, U. S. Army:

The war of 1914-1918. U. S. Army Medical Corps (name of recipient) was mentioned in a despatch from Field Marshal Sir Douglas Haig, K.T.G.C.B., G.C.V.C., K.C.T.E., dated Nov. 7, 1917, for gallant and distinguished services in the field. I have it in command from the king to record his majesty's high appreciation of the services rendered.

WINSTON S. CHURCHILL, Secretary of State for War.
War Office, Whitehall, R. W., March 1, 1919.

Medical Officers Under New Army Bill

According to the *Army and Navy Register* the Army reorganization bill, as it passed the House, contained a provision in the matter of promotion from a single list which, unless amended, would practically destroy the medical department. "In bringing medical officers into the single list for the purpose of equalizing promotion, which is the purpose of this new method of advancement, officers of the medical corps are placed on the list immediately below other officers of two years' longer service. This concession in the way of constructive service is altogether inadequate," says the *Register*, "and can only have a detrimental effect upon medical corps personnel. The provision in the Senate bill on Army reorganization, on which measure no action has been taken beyond reporting it from the military committee, is much more satisfactory and it is probable that when the two rival measures get into conference the Senate provision will be agreed upon, inasmuch as Messrs. Kahn and Anthony of the House military committee, who will be members of the conference, have given assurance that the defects in this respect in the House bill will be corrected."

Increased Appropriation Asked for Public Health Service

The Secretary of the Treasury, D. F. Houston, in a formal letter to Congress has asked that the appropriation for the Public Health Service for the fiscal year 1921 be increased from $8,000,000 to $10,000,000. The reasons set forth for this increased expenditure are stated in the following letter of the acting Surgeon-General addressed to the Secretary of the Treasury.

Sir:—I have the honor to request that a letter be sent to the Speaker of the House of Representatives, asking that the estimate for appropriation for medical, surgical, and hospital services and supplies for war-risk insurance patients and other beneficiaries of the Public Health Service, etc., for the fiscal year 1921 be increased from $8,000,000 to $10,000,000.

The estimate for $8,000,000 was made last August by the Surgeon-General and at that time it was thought it would be sufficient for the purpose, but since that time the number of patients has greatly increased and it has been found necessary to ask Congress for $10,000,000 to take care of this increased number of patients during the present fiscal year. The sum of $6,000,000 has already been appropriated, and the second urgency deficiency bill contains an item for the provision of an additional $4,000,000. There was a deficiency of $246,000 on Feb. 1, 1920, so that the whole of this additional $4,000,000 will undoubtedly be needed.

In view of the above fact, I ask that Congress be requested to grant this additional $2,000,000, in order that the sick and disabled discharged persons from the military and naval forces may be given proper care and treatment during the fiscal year 1921.

Respectfully,

J. C. PERRY,
Acting Surgeon-General, U. S. Public Health Service.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA
San Leandro—Leahy, W. R.

ILLINOIS
Chicago—Soloway, S. S.

KANSAS
Wichita—Hazzard, L. R.

MARYLAND
Annapolis—Frank, J. R.

MICHIGAN
Alto—Reese, J. A.
Grand Rapids—Corey, P. V.

NEW MEXICO
Albuquerque—Davis, C. C.

NEW YORK
Brooklyn—Skeer, J.
New Brighton—Robillard, G. L.

SOUTH CAROLINA
Greenwood—Burnett, A. D.

VIRGINIA
Norfolk—Frothingham, E.
Richmond—Denton, A. L.
Simpson, W. A.
Williams, E. G.

Foreign Correspondence

PARIS

March 4, 1920.

Meeting of French Medical Journalists

The general meeting of the Association professionnelle des journalistes médicaux français was held recently at the Faculté de médecine de Paris under the presidency of Dr. Doumer, professor at the Faculté de médecine de Lille.

After the reading of the reports of the general secretary and treasurer, the assembly adopted the following code of ethics: 1. The members of the association shall afford each other mutual aid. 2. No members of the association shall agree to do the work of a colleague for less money than such colleague received. 3. A member of the association shall not accept the position of a colleague without having first informed such colleague and having learned the latter's reasons for leaving the position. 4. If a member of the association is appointed managing editor of a journal, or is requested to choose the members of the editorial staff, he shall give preference to the members of the association. 5. If the relative merit of articles by members of the association is the same as that of others, preference should be given to members of the association in the matter of abstracts and personal mention. 6. Members of the association will mention, whenever possible, the works of the association and of its individual members, and the events concerning the members of the association, in the journals on which they col-

laborate. 7. Every case at law between two members of the association shall be first taken up and discussed by the family council of the association before it is brought before any other jurisdiction. 8. In the case of litigation of a professional nature between a member of the association and an outsider, the association shall examine into the cause, and if it shall recognize the justice of its member's case, it shall give him its moral support, and, if the circumstances seem to warrant it, such financial assistance as may seem proper; and if it shall decide on such a course it shall hold a special meeting to decide what aid shall be given the members in question. 9. The foregoing articles must be accepted by every applicant for membership in the association.

The Crowded Condition of Paris Hospitals

During the war, the mobilization of a large number of physicians made it necessary for many people to have recourse to the hospital who could otherwise have been cared for at home. This circumstance gave them an opportunity of discovering that the hospitals, from the standpoint of medical skill, care and hygiene, offered all that could be expected. All classes of Paris society thus came in contact with the consultation service afforded by the hospitals. They learned that in the hospital one is better cared for than anywhere else, and also that such care does not cost them a sou. Consequently, they have continued to rely on the hospital, and the deplorable result has been that there is no longer sufficient room in the hospitals for the really needy.

The maternity hospitals are especially crowded. In order to remedy this condition, the prefect of the department of the Seine has adopted a series of measures with the view of giving special aid to women who will consent to be confined at home, such as the assumption by charitable organizations of the fee charged by midwives and the fixing of the ordinary medical fee at 20 francs a visit. Furthermore, M. Mesureur, director of the Assistance publique, has announced that he has been able to provide 300 more beds for confinement cases.

Number of Wounded Still Under Treatment in the Military Hospitals

In reply to a request for information received from a member of the Chamber of Deputies, the minister of war states that the number of demobilized wounded soldiers and sailors still under treatment in the military hospitals, under date of Jan. 15, 1920, was 7,133.

Measures to Promote an Increase in the Birth Rate

Adolphe Chéron, deputy of the department of the Seine, has presented a bill which is intended to promote an increase in the birth rate. Among the measures proposed I may mention the surveillance of lying-in hospitals; the repression of abortion and birth control, relieving physicians and midwives, under certain circumstances, from the obligations of professional secrecy, and aid to large-sized families.

Reorganization of Night Medical Service

In a previous letter (The Journal, March 20, 1920, p. 815), I referred to the reorganization of night medical service in Paris. The Syndicat des médecins of the department of the Seine, which had offered to take part in the competitive examination held in connection with the reorganization of this service, is protesting vigorously because the proffered collaboration of the Syndicat was systematically ignored by the administration.

Typhus Fever in Paris

A slight epidemic of typhus fever has been reported in the Saint-Sulpice seminary, where refugees have been lodged; among others, a number of Polish workmen. The epidemic seems now to have been brought to an end. The Assistance publique has given instructions that delousing in the hospitals shall be done with great care. In this connection, Senator Gaudin has asked the minister of hygiene what measures have been taken to protect France against typhus fever, which is raging in Poland and the Ukraine. The minister of hygiene has replied that, according to the most recent information, there is no epidemic of typhus fever in the countries of central Europe immediately contiguous to our borders. There were a few sporadic cases in Germany, but this did not constitute a menace to us. In Poland, however, it was true that an epidemic existed. There was danger of its being brought to France by emigrant Polish workmen if strict measures to prevent it were not taken. Besides the prophylactic measures taken in Poland when the workmen leave there, vigorous sanitary measures are carried out by the bureau of immigration when they arrive in Toul, which is especially, or one may say, exclusively, affected by Polish immigration. Owing to an understanding reached by the civil and military sanitary authorities, the bureau of immigration at Toul is abundantly provided with the necessary sanitary apparatus. The prophylactic measures taken consist of a medical examination, vaccination, shower baths, disinfestation, disinfection, and isolation of suspects.

Increase in Medical Fees

Owing to the increased cost of living, medical fees in Paris have been doubled. The Syndicat médical of Montpellier has gone even further and has decided to triple former rates, the fee for a simple office consultation being 15 francs; emergency calls or consultations on Sundays and holidays, 30 francs; night calls, 50 francs; special distance charge, 3 francs per kilometer. The foregoing rates represent the ordinary charges and do not affect famous consulting physicians nor specialists.

LONDON

Feb. 28, 1920.

Incidence of Influenza

The Ministry of Health has issued a long circular on influenza, stating that the disease is epidemic in many large American cities, but the proportion of severe or fatal cases is smaller than in 1918-1919. Our vital statistics show a slight increase, but the increments are so small and the uncertainty of classification so great that no unfavorable inferences can be drawn from these fluctuations. Notified pneumonia has increased, but here again it is not possible to say how much of this may be due to seasonal variations. There are no indications of epidemic influenza in factories, but some large schools in southern and southwestern England are affected. The disease is epidemic in a few localized communities, and the type is similar but less severe than that of 1918-1919. There is no evidence of a pandemic comparable to that occurring in America and certain parts of Europe. The ministry again draws attention to the warning previously given and the measures advised (as referred to in previous letters).

Reconstructing the Army

Many bitter complaints have been made of the obstruction to urgently required reforms offered by the higher command of the army, perhaps the most conservative body among a conservative people. But, above all, we are practical, and can learn in the dear school of experience. So the reformers had their way in the end, and the British army became as perfect and as modern a fighting machine as it was possible to make. There is now no backwardness in profiting by the lessons of the war. The war office has issued a memorandum showing how these have been applied in every branch of the service. The prewar establishment of officers of the medical corps was 1,068. On the date of the armistice the strength of officers was 14,461, and in addition 1,524 civil physicians were employed. There are at present employed 3,338 officers and 322 civil physicians, and this number is continually being reduced in conformity with the reduction in hospital population. The prewar establishment of other ranks was 3,895. The strength of warrant officers, noncommissioned officers and men of the medical corps on the date of the armistice was 131,361. This number was supplemented by the employment of 18,660 voluntary aid detachment, general service women in hospitals, and other formations in the United Kingdom, while large numbers of such women were also employed in France, Saloniki and Malta. The strength of other ranks, Feb. 8, 1920, was 18,412. There were in addition, employed in hospitals, etc., in the United Kingdom 4,771 voluntary aid detachment, general service women. Considerable numbers of the latter are still being employed in the Rhine army, Black Sea, and Malta. The medical section of the territorial army will be reorganized on its prewar basis, with such additions and alterations as the war has shown to be necessary.

DENTAL CORPS

Sound teeth in the soldier are of prime importance. An army dentally fit will have reduced rates of sickness and invaliding. A proposal has therefore been put forward for the formation of a dental corps to consist of 110 officers and 132 of other ranks (mechanics and orderlies) for which it is hoped approval will be obtained.

PATHOLOGY AND HYGIENE

New directorates of hygiene and pathology have been established within the army medical department, each with a director and deputy at headquarters, and assistants and deputy assistants in the important commands and districts at

home and abroad. It will now be possible for officers who have devoted their professional lives to the study and practice of these highly technical subjects to continue to work in them throughout their service, instead of, as has hitherto been the case, having to abandon them to take up ordinary administrative duties on attaining a certain seniority. Promotion to the highest rank is now open to such specialists.

VACCINE DEPARTMENT AT THE ARMY MEDICAL COLLEGE

The work of the vaccine department during the war developed enormously. More than 33,000,000 doses of vaccines against typhoid, cholera, dysentery and other conditions were prepared during the last five years and dispatched for the use of troops serving in all parts of the world. Among our great armies in France, from the beginning of the war till the end of 1918, there were only 7,423 cases of typhoid and paratyphoid, with 266 deaths. In the much smaller Boer War there were 57,684 cases, with 8,022 deaths. In the French army, before it was fully protected by inoculation, there were, from the commencement of hostilities till the end of October, 1915, 95,809 cases, with 11,690 deaths. Subsequent to that period their figures are more comparable with our own. Recent German statistics of mortality in their armies during the war mention 7,751 deaths from typhoid.

HOSPITAL ACCOMMODATION IN THE UNITED KINGDOM

The total number of beds of all kinds at the armistice was 364,133; Feb. 6, 1920, 43,497; the number closed since the armistice has been 320,636. The numbers in hospitals in the United Kingdom at the time of the armistice were 316,000; May 1, 1919, 112,000; Feb. 1, 1920, 28,000. At the time of the armistice there were also 8,619 patients on special leave, and 4,648 in billets. These were slightly ill or convalescing patients who were disposed of in this way owing to the pressure on the hospital accommodation.

CHEMICAL WARFARE

We must unfortunately continue our studies of what is known as chemical warfare. No nation has renounced the use of poison gases as the result of the peace conference. There are nations whose word we could not respect if they did renounce it. It is essential to study the offensive side of chemical warfare if we are to be prepared for defense. The great importance of adequate defensive appliances arises from the fact that preparations for the offensive use of gas can be made in peace time with great secrecy, and may have far reaching and even fatal results in the early stages of war.

Eugenics

At the Galton anniversary, Arthur Keith delivered the lecture. He said that while Charles Darwin, who was Galton's cousin, and those who championed the cause of evolution turned their attention to unveiling man's past, Sir Francis Galton devoted his life and genius to discover how the machinery of evolution which had raised man to his present estate could be used for his further advancement. Galton discovered the ladder whereby, if a nation were so minded, it could climb to a higher estate of both mind and body. The rungs of that ladder he fashioned out of the laws of heredity. Under nature's conditions, and amid the circumstances of modern life, we tried to climb blindly, and we stumbled, fell and suffered. Galton showed that the ascent could be made sure, easy and merciful. In his earlier days he was, perhaps, inclined to invoke the aid of the state and to resort to compulsory measures; but, as his knowledge grew and his experience ripened, he realized that mere artifices invented by statesmen could affect only the stragglers on the ladder—the main mass of the nation would be left untouched. The nation which would raise itself on the ladder must raise itself not piecemeal, but as a whole; every grade and section of a people must be made to move upward at the same time. Galton saw that to effect such a desirable change—one which would give the nation which adopted it an advantage over all its neighbors or rivals—the heart of the people must first be captured and a social avalanche set in motion. He was convinced that if a knowledge of his ideals, his aims and his discoveries could be made to sink into and leaven the minds of the people, the upward movement he longed to initiate would at length begin. That could be done only by education—education in the laws which govern the transmission and building up of the best qualities of the brain and body.

Removal of a Children's Hospital to the Country

The importance of country life to the sick is becoming more and more recognized. Though many hospitals maintain convalescent homes in the country, it has not happened before that a hospital has been moved bodily to the country. This has been done in the case of the Alexandria Hospital for Children with Hip Disease, an institution established in London many years ago.

Threatened Strike of Physicians

The tendency of a portion of the profession to adopt militant labor methods has been shown by the formation of the Medico-Political Union, a body registered as a trade union which, however, has not been able to attract more than a few members. Another example of the tendency has occurred in Ireland. The physicians in the Castle Comer Union have threatened to strike unless the guardians accede to their demand for increased salaries. At a large meeting of physicians in the neighboring town of Kilkenny, a resolution was passed expressing sympathy with these medical officers in their determination to cease work and refuse to attend any patient until their demands are acceded to. Medical trade unionists in England have not gone this length, for they have always explained that they have no intention of striking against the sick, but merely against working for the state when the terms are unsatisfactory, so that in case of a dispute their services would be available, though not under government arrangements.

BUENOS AIRES

Feb. 18, 1920.

Visit of Drs. Mayo and Martin

From February 4 to 8 Drs. W. J. Mayo and F. H. Martin, who came here from Chile, and went afterwards to Montevideo, were in Buenos Aires. Their trip had for its object to cultivate closer relations between the American College of Surgeons and the surgeons of South America. The School of Medicine of Buenos Aires designated Professors Arce, Chutro, Viñas and Palma to accompany our guests, who, while they were here, made a rather rapid survey of four of the local hospitals. While at Buenos Aires, Dr. Mayo called attention to the poor organization of the nurses' service in the municipal hospitals and the inadequate protection against flies.

Typhus Fever in Chile

In connection with several articles by Argentine physicians, the director-general of public health of Chile, Dr. Ramon Corvalán Melgarejo has published a report on the present epidemic of typhus fever. There are no cases of the disease in the northern provinces as far as Aconcagua, the disease having disappeared from Andes, Limache, Calera, San Antonio, La Victoria, Rengo, Peumo, San Carlos, Yungay, Florida, Coronel, Temuco and Conbarbala. There has been a recurrence of the epidemic at Valparaiso, with more than 160 cases. At San Fernando, Cunaco, Concepción, Talcahuano, Cabrero, Mulchen and Imperial the epidemic has decreased very much. At Santiago there were at one time as many as 580 hospital cases with an average of thirty-four cases a day, but the epidemic there has also decreased very much, there being now only 163 hospital cases with an average of ten new patients a day.

The enforcement of preventive measures, similar to those adopted last year, on the railroad station at the frontier, has been recommended to the National Department of Public Health.

Bubonic Plague

The increase of plague in all South American countries has also revealed itself in Argentina. The National Department of Public Health has put in force deratization measures at Buenos Aires, and has decided to establish disinfection stations in all the ports of the republic. The province of Santa Fe, which has suffered most from the disease, has been divided into three zones with headquarters at Santa Fe, Cordoba and Casilda, in charge, respectively of Drs. Ruiz Huidobro, Beuchetril, and Bascary, who will carry out antirat measures throughout that district.

Marriages

HERBERT RANDOLPH UNSWORTH to Miss Elizabeth Elmer McCall, both of New Orleans, March 12.

THOMAS LAWTON, Hinsdale, Ill., to Miss Elizabeth A. Stage of Davenport, Iowa, March 16.

EDGAR CHRISTY, Hastings, Iowa, to Mrs. Elsa Riedelsberger, at Omaha, March 3.

Deaths

Philip Coombs Knapp, Boston; Harvard Medical School, 1883; aged 61; a member of the American Urological Association and its president in 1895, and a specialist in neuropathology; a fellow of the Royal Society of Medicine; visiting physician to the division of nervous diseases of the Boston City Hospital since 1885, and to the Boston Dispensary from 1886 to 1888; instructor in diseases of the nervous system in his alma mater from 1888 to 1913; consulting physician to the Massachusetts State Hospital for Insane Criminals since 1895; trustee of the Boston Insane Hospital from 1897 to 1902; died in the Boston City Hospital, February 22.

Clinton Tremaine Purdy, Moncton, N. B.; University of the City of New York, 1884; aged 60; formerly mayor of Moncton; coroner of Westmoreland County in 1897; president of the Moncton Medical Society in 1898; formerly president of the College of Physicians and Surgeons of New Brunswick; a member of the medical council of New Brunswick and alderman for the city of Moncton; died, January 12.

Richard Henry Lee Bibb ● Saltillo, Coahuila, Mexico; Texas Medical College, Galveston, 1872; Bellevue Hospital Medical College, 1877; aged 71; for many years chief surgeon of the Mexican National Railroad, of the American Hospital, Mexico City, and of the national lines of Mexico; president of the International Medical Association of Mexico in 1911; died, March 2, from influenza.

Emile Schmoll, Livermore, Calif.; University of Basle, Switzerland, 1896; aged 47; a member of the Medical Society of the State of California; lecturer on internal medicine in Cooper Medical College and visiting physician of the San Francisco City and County Hospital; died, March 10, at a sanatorium in Livermore, from a nervous breakdown.

William Charles Hassler ● San Francisco; Cooper Medical College, San Francisco, 1892; aged 51; health officer of San Francisco; a specialist in public health; assistant professor of hygiene and sanitary science in Hahnemann Medical College of the Pacific, San Francisco; died, February 11, from influenza.

Wade Doster, Capt., M. C., U. S. Army, Coldwater, Kan.; Jefferson Medical College, 1907; aged 39; on duty at Camp Furlong, N. M.; was shot and killed by his wife at Columbus, N. M., March 9, while she was defending herself from an attack made by him, in which she received a bullet wound of the breast.

Charles Sackett Starr, Rochester, N. Y.; College of Physicians and Surgeons in the City of New York, 1869; aged 75; a member of the Medical Society of the State of New York; physician to the Monroe County Jail in 1879 and 1880, and coroner's physician from 1880 to 1884; died, March 8.

Henry Wells Horn ● San Francisco; Cooper Medical College, San Francisco, 1897; aged 48; a member of the American Ophthalmological, Rhinological and Otological Society; a well known ear, nose and throat specialist; died in St. Francis' Hospital, March 5, from influenza.

Hugo William Wightman ● Scottsbluff, Neb.; Northwestern University Medical School, Chicago, 1901; aged 47; for ten years professor of anatomy in the John A. Creighton University, Omaha; surgeon to the Brazil Hospital; died in a hospital in Omaha, March 11, from influenza.

George W. Simpson, Mapleton, Pa.; Jefferson Medical College, 1876; aged 75; a member of the Medical Society of the State of Pennsylvania; for ten years local surgeon to the Pennsylvania system; a veteran of the Civil War; died in his apartment, March 6.

Henry Howard Wynne, Oklahoma City; College of Physicians and Surgeons in the City of New York, 1880; aged 60; a member of the Oklahoma State Medical Association; a specialist on diseases of the eye, ear, nose and throat; died about February 26.

Stafford Baker Smith ● New York City; College of Physicians and Surgeons in the City of New York, 1905; aged 36; a member of the American Urological Association; surgeon, U. S. P. H. S.; died, February 29, from lobar pneumonia.

Benton Knox Jones, Kenton, Ohio; Eclectic Medical Institute, Cincinnati, 1889; aged 62; president of the Ohio State Medical Association in 1897, and for two terms coroner of Hardin County; died, March 6, from erysipelas.

● Indicates "Fellow" of the American Medical Association.

Angus McD. Ford, Montreal; Bishop's College, Montreal, 1898; F.R.C.S., L.R.C.P. (Edin.), who had been on military duty with the Canadian Army Medical Corps since the beginning of the World War; died at sea, recently.

Herbert James Hamilton, Toronto; University of Toronto, 1886; L.R.C.P. (Lond.), 1886; aged 55; once president of the Ontario Medical Association; died in Wallesley Hospital, Toronto, from pneumonia, February 5.

Townsend F. Dickinson, Cincinnati; Miami Medical College, Cincinnati, 1881; aged 61; president of the Cincinnati Pension Examining Board during President Cleveland's administration; died, March 5.

Derrick G. Barkalow, Adel, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 62; once president of the Dallas County Medical Society; died about March 5, from cerebral hemorrhage.

Joseph Alexander Gendron, Ware, Mass.; Victoria University, Cobourg, Ont., 1888; aged 57; for several terms a member of the board of health of Ware; died in the Ware Hospital, March 7.

Edgar D. Seaman, Los Angeles; College of Physicians and Surgeons in the City of New York, 1884; aged 64; a member of the Medical Society of the State of California; died, February 20.

Donald Hoff Hoover, Cleveland; Western Reserve University, Cleveland, 1919; aged 26; an intern in the Lakeside Hospital, Cleveland; died in that institution, March 2, from pneumonia.

John Alva Allen, Medical Lake, Wash.; Trinity Medical College, Toronto, 1904; aged [illegible] captain, M. C., U. S. Army, and discharged, March 3, 1919; died, March 5, from pneumonia.

Abraham Lincoln Garver, Roaring Spring, Pa.; Jefferson Medical College, 1883; aged 61; a member of the State Industrial Board since 1916; died, March 2, from angina pectoris.

Charles Richard MacKimmie, Norfolk, Va.; Maryland Medical College, Baltimore, 1903; aged 51; died, February 12, from disease of the stomach and liver following influenza.

John J. McCarthy, Williamsport, Pa.; College of Physicians and Surgeons, Baltimore, 1896; died in the Renovo, Pa., Hospital, March 5, from pneumonia following influenza.

William Wickham Horton, Unionville, Conn.; University of the City of New York, 1879; aged 64; a member of the Connecticut State Medical Society; died, February 19.

Robert Joseph Dwyer, Toronto; University of Toronto, Ont., 1891; M.R.C.P. (Lond.), 1902; associate professor of clinical medicine in his alma mater; died, January 26.

Lachlin MacPherson, Antigonish, N. S.; Tuft's College Medical School, Boston, 1907; aged 44; died in St. Martha's Hospital, Antigonish, January 1, from pneumonia.

Sheldon B. Hewett ● Girard, Kan.; University Medical College of Kansas City, Mo., 1904; aged 42; died, February 26, from cardiac embolism following influenza.

Edward S. Quinn, Kirksville, Mo.; Marion-Sims Medical College, St. Louis, 1896; aged 59; a member of the Missouri State Medical Association; died, February 24.

David Jenkins McCaa, Ephrata, Pa.; Jefferson Medical College, 1867; aged 74; died March 10, from injuries received in a runaway accident in February.

Sam W. Adams, Rockland, Texas; University of Memphis, Tenn., 1894; aged 53; died in the Hotel Dieu, Beaumont, Texas, February 16, from septic meningitis.

Robert Kirkwood Robinson, Belair, Md.; University of Maryland, Baltimore, 1859; aged 87; a veteran of the Civil War; died, March 9, from senile debility.

James M. Robinson ● Guthrie, Ky.; University of Louisville, Ky., 1882; aged 64; once mayor of Guthrie; died, February 26, from carcinoma of the stomach.

Henry A. Phillips, Chicago; Bennett Medical College, 1871; aged 75; a member of the Illinois State Medical Society; died, March 7, from pneumonia.

Abram Markle Blackburn, Steubenville, Ohio; Medical College of Ohio, Cincinnatti, 1864; aged 77; a veteran of the Civil War; died, March 5, from uremia.

Peter Lafayette Adams, Dawson, Texas; St. Louis College of Physicians and Surgeons, 1898; aged 77; died at the home of his daughter in Dawson, February 9.

Albert Harris Daniels, Mitchell, S. D.; University of Michigan, Ann Arbor, 1864; aged 79; for thirty-four years a practitioner of Mitchell; died, March 4.

William John Chambers, Calgary, Alta.; University of Toronto, Ont., 1902; was instantly killed in a railway accident at Sudbury, Ont., recently.

William Edward Everett, Brownsburg, Ind.; University of Michigan, Ann Arbor, 1869; aged 74; died, February 16, from pneumonia following influenza.

James R. Adams, Fort Worth, Texas; Medical College of Ohio, Cincinnati, 1841; aged 97; died at the home of his son in Fort Worth, February 27.

James Patrick Lane ● Cascade, Iowa; John A. Creighton Medical College, Omaha, 1906; aged 40; died in Mercy Hospital, Dubuque, February 29.

David H. Clay Scott, Montgomery, Ala.; Meharry Medical College, Nashville, Tenn., 1895; aged 49; died, Dec. 25, 1919, from carcinoma of the liver.

Charles Baker Reid ● Van Wert, Ohio; Fort Wayne, Ind., College of Medicine, 1881; aged 63; died, March 1, from cerebral hemorrhage.

Osmund Eells Goodrich, St. Joseph, Mich.; Hahnemann Medical College, Chicago, 1866; aged 75; died, February 27, from senile debility.

Almon L. Brown ● Milwaukee; Rush Medical College, 1894; aged 54; a specialist in internal medicine; died, Dec. 1, 1919, from diabetes.

Joseph Mickler, Tampa, Fla.; University of Tennessee, Nashville, 1914; aged 33; a roentgenologist; died, March 5, from typhoid fever.

James Polk Von Stein, North Liberty, Iowa (license, years of practice, Iowa, 1887); aged 68; a practitioner since 1877; died, March 1.

James Edward Harper, Assumption, Ill.; Chicago Homeopathic Medical College, 1899; aged 50; died, February 21, from sarcoma.

Russell Hathaway, Wellington, Ohio; Homeopathic Hospital College, Cleveland, 1876; aged 72; died, February 27, from neuritis.

John H. MacDonald, Chicago; Jenner Medical College, 1898; aged 64; died, March 16, from carcinoma of the mouth and throat.

Louis William Knight, Baltimore; University of Maryland, Baltimore, 1866; aged 75; a noted numismatist; died, March 16.

James Louis Gilbert, El Paso, Texas; Baylor University, Dallas, Texas, 1911; aged 33; died, February 20, from influenza.

Louis E. H. Duffel, Natchitoches, La.; Tulane University, New Orleans, 1900; aged 44; died in New Orleans, February 28.

Edward Gomer Davies, Yankton, S. D.; Rush Medical College, 1879; aged 74; died, March 8, from valvular heart disease.

John T. McGrath, Scranton, Pa.; University of Pennsylvania, Philadelphia, 1896; aged 45; died, March 4, from heart disease.

William J. Brand, Detroit; University of Buffalo, N. Y., 1886; aged 63; died, February 29, from locomotor ataxia.

Warrick Barnett, Borden, Ind.; University of Louisville, Ky., 1911; aged 37; died, February 8, from pneumonia.

James C. Fish ● Beaver Falls, Pa.; Jefferson Medical College, 1884; aged 58; died, March 1, from pneumonia.

Charles Naylor Abbott, McKinnie, Texas; University of Alabama, Mobile, 1875; aged 69; died, February 20.

Charles W. Tower, Marshfield, Ore.; Willamette University, Salem, Ore., 1870; aged 79; died, February 26.

John Abram Hunt, Taunton, Mass.; Boston University, 1893; aged 65; died, February 13, from carcinoma.

Oscar M. Waterman, San Francisco; University of Leipzig, Germany, 1893; aged 63; died, February 27.

Edward F. Christian ● LaCrosse, Wis.; Rush Medical College, 1906; aged 36; died, February 25.

Joseph M. Ferguson, Sedalia, Mo.; University of Louisville, Ky., 1869; aged 80; died, March 6.

Correction.—Dr. Guy Marshall McDowell, Bay City, Mich., advises us that, notwithstanding the notice of his death which appeared in THE JOURNAL, March 13, he is "still alive and going strong." The Dr. McDowell who died was Dr. Guy McDowell who formerly lived in Bay City, but had been practicing in Detroit for about twenty years.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

PLATT'S CHLORIDES

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on "Platt's Chlorides." It also declares the preparation inadmissible to New and Nonofficial Remedies because its composition is uncertain and indefinite and because the claims made for it are exaggerated and misleading.

W. A. PUCKNER, Secretary.

"Platt's Chlorides," marketed by Henry B. Platt, New York, is sold as a disinfectant and germicide. Only incomplete and contradictory statements have been made in regard to its composition. Many years ago (about 1899) the composition of Platt's Chlorides was given as "The Chlorids of Zn 40 per cent., Pb 20, Ca 15, Al 15, Mg 5, K 5." The statement that the preparation contained 20 per cent. of lead chlorid, is interesting in view of the fact that lead chlorid is soluble in water at ordinary temperatures to the extent of less than one per cent. In a booklet, also issued a number of years ago, the following "Formula of Platt's Chlorides" was given:

"A saturated solution of Metallic Chlorids combined in the following proportions:

"Sol. Zinc Chlorid	40 per cent.
"Sol. Aluminum Chlorid	15 per cent.
"Sol. Lead Chlorid	20 per cent.
"Sol. Calcium Chlorid	15 per cent.
"Sol. Magnesium Chlorid	5 per cent.
"Sol. Potassium Chlorid	5 per cent."

The label on a bottle purchased in 1911, describes Platt's Chlorides as:

"A Highly Concentrated Solution of the Chlorids of Aluminum, Calcium, Lead, Zinc, etc."

The label of a bottle purchased in 1919, reads:

"Contains Inert Material: Water 84.0%. Sodium Chlorid 4.8%. Calcium Chlorid 0.3%."

This statement is obviously made to meet the requirements of the federal Insecticide Act. This law requires either that the identity and the amounts of potent ingredients in disinfecting preparations be declared or else that the percentage of the inert ingredients of such preparations be given. The omission from the label of all statements with regard to the potent ingredients of the preparation and the absence of such a statement in recent advertising matter suggests either that the older statements about its composition were false or else that the composition has been changed.

Tscheppe published (Pharmaceutische Rundschau **8**:109, 1890) an analysis of Platt's Chlorides which has been quoted in other publications as indicating the composition of the preparation. He reported that he found each quart of the preparation to contain aluminum sulphate 6 ounces, zinc chlorid 1½ ounces, sodium chlorid 2 ounces, calcium chlorid 3 ounces.

Some years ago (about 1911) the company made the following statement relative to the germicidal power (phenol co-efficient) of Platt's Chlorides:

". . . for some time the carbolic acid co-efficiency of our output has been from 2.5 to 4.3; the average being about 3; namely about three times stronger than pure carbolic acid."

In 1912, the U. S. Public Health and Marine Hospital Service reported (*Bulletin 82*, Public Health and Marine Hospital Service, p. 69) that the phenol coefficient of a sample of Platt's Chlorides was so low that it could not be determined and also that the sample was found to contain some mercuric chlorid. In 1913, the North Dakota Agricultural Experiment Station reported (*Bulletin*, July, 1913, p. 292), that

Platt's Chlorides contained principally zinc chlorid, also some aluminum chlorid, calcium chlorid, and traces of mercuric chlorid. The phenol coefficient, determined by the Hygienic Laboratory method, was found to be 0.05.

The preceding suggests that the composition of Platt's Chlorides had been changed (without notice to the consumer) and that it had been fortified by the addition of mercuric chlorid. Years ago part of the advertising of this product was a testimonial from a health official which declared that, for disinfection, "bichlorid of mercury is useless in disinfecting sputum or discharges from the bowels, being rendered inert by the albumen present" and it lauded Platt's Chlorides as devoid of such drawbacks.

RECENT ANALYSES OF PLATT'S CHLORIDES

To determine the present composition of Platt's Chlorides and to compare it with that sold formerly, the A. M. A. Chemical Laboratory has made an analysis of a specimen purchased in 1919 and also of one that was purchased in 1911 and since kept unopened in the files of the Council on Pharmacy and Chemistry. The following table contains the results of these analyses (all quantities given are Gm. per 100 c.c.):

	1911 Specimen	1919 Specimen
Color	Colorless	Straw Color
Odor	None	None
Specific Gravity at 25 Cc.	1.1229	1.1313
Total Solids (residue at 100 Cc.)	16.49	18.33
Chlorid (Cl^-)	7.60	10.74
Sulphate (SO_4^{--})	1.11	.16
Aluminum (Al^{+++})	.22	.90
Calcium (Ca^{++})	.19	.13
Zinc (Zn^{++})	5.11	3.93
Lead (Pb^{++})	.046	Traces
Mercury (Hg^{++})	.....	.0086
Sodium (Na^+)	1.01	1.39

These quantities transposed to hypothetical combinations would indicate that Platt's Chlorides has the following composition:

	1911 Specimen	1919 Specimen
Aluminum Sulphate	1.32	.18
Aluminum Chlorid	.07	4.39
Calcium Chlorid	.54	.37
Zinc Chlorid	10.66	8.19
Lead Chlorid	.06	Traces
Mercury Chlorid	.....	.0116
Sodium Chlorid	2.57	4.81
Hydrogen Chlorid	.43	None

In the past, the advertising has suggested, more or less directly, that, as chlorinated lime (bleaching powder) may be made to give off chlorin gas which disinfects, so the air in a room may be disinfected by evaporating Platt's Chlorides. Thus the label of the 1911 specimen contains the following:

"FOR STORE ROOMS, Refrigerators, and Closets, keep a sponge saturated with the pure liquid in a saucer on an upper shelf."

On the label of the 1919 specimen, the statement reads:

"REFRIGERATORS AND STOREROOMS—As a disinfectant wash regularly with one part Chlorides to eight of water. As a deodorant, keep in an open vessel a sponge or cloth saturated with the Chlorides full strength."

That the owner of Platt's Chlorides really believes that the vapors of the preparation have disinfecting properties is seen from a letter over the name of Henry B. Platt printed in the New York *Tribune* in 1916. This read, in part:

". . . by keeping in a dish or saucer on radiators Platt's Chlorides diluted one-half, the hot solution will evaporate and purify the air, thus destroying the grip germ which is the cause of all the trouble."

From the analysis of Platt's Chlorides, it is evident that when the preparation is evaporated, water vapor only escapes.[1] Whatever disinfecting or germicidal action the preparation may possess is exercised only when the solution is brought in direct contact with the substance to be disinfected.

The aluminum and zinc salts present may be useful as deodorants but they are not effective as germicides. The presence of mercuric chlorid in a concentration of 1 to 10,000 is hardly to be considered as materially increasing the efficiency. The directions recommend the use of a mixture of 1 part of Platt's Chlorides to 10 parts of water for rinsing the hands, and a mixture of 1 part to 4 parts of water for the disinfection of discharges. It is further stated that 1 quart makes 2 gallons sufficiently strong for general use. It is evident that such dilutions decrease considerably the feeble germicidal action of the original fluid.

1. It is well known that when a solution of mercuric chlorid in water is evaporated, mercuric chlorid passes off with the water vapors, but under any condition the amount is but a fraction of the whole. As in Platt's Chlorides other metallic chlorids are present, the formation of complex mercuric compounds which is bound to have occurred, should retard or prevent the volatilization of mercuric chlorid. That this actually occurs was confirmed by the following experiment: When 1 gm. mercuric chlorid was dissolved in 1 liter of water and the solution distilled, the distillate contained a very small amount of mercury. Then the experiment was repeated after adding sodium chlorid to the solution to simulate the conditions in Platt's Chlorides. In this case no mercury was found in the distillate. Even were all the mercury in a bottle of Platt's Chlorides volatilized in a room 10 by 12 by 9 feet, this would be equivalent to only about 1/100 grain mercuric chlorid per cubic foot.

Correspondence

"GOLAY'S MODIFIED WASSERMANN REACTION"

To the Editor:—In the description in Queries and Minor Notes of the Golay modification of the Wassermann reaction (THE JOURNAL, Feb. 21, 1920, p. 543) you say the "complement is obtained from a rabbit." I take it that this is an error and should be "amboceptor." In the titration of the amboceptor I presume a known negative active human serum is used. It is this feature that has attracted my attention. The hemolytic factor is completed with the active native human complement. In a series of experiments over a period of ten months I have found that the quantity of human complement varies in different individuals, and in some it is absent. The estimation of the quantity of complement in a given serum is based in general on the Hecht modification of the Wassermann reaction, with modification of details adaptable to the human system. The reagents used were 2.5 per cent. human red cell suspension, one unit of amboceptor, and beef heart antigen cholesterinized to the extent of 0.072 per cent. in dilutions of 1:10. The serum to be tested should be fresh, but I have found complement still active after traveling 400 miles in the mail in moderately warm weather.

To determine the complementary value of a serum, six tubes are set up in the front row. Each tube receives 0.1 c.c. of active serum and one unit of amboceptor. The first receives 1 c.c. of salt solution, and each succeeding tube 0.1 c.c. less than the preceding tube. In the first tube is placed 0.1 c.c. of human red cells, and in each succeeding tube 0.1 c.c. more, so that the last tube will receive 0.6 c.c. of cells. These tubes are then incubated for one hour at 37 C., during which time they are repeatedly shaken. At the end of this period that tube is sought in which there is the greatest amount of complete hemolysis. If the last tube shows complete hemolysis, which rarely happens, 0.3 c.c. is used in the actual test for that particular serum. Two rear tubes are set up at the time the series of six are prepared; one receives 0.1 c.c. of the same active serum, 0.1 c.c. of antigen, and 0.7 c.c. of salt solution; the other tube receives 0.1 c.c. of serum and 0.8 c.c. of salt solution; both are then placed in the refrigerator for a period of three or four hours. At the end of that period these tubes receive the required amount of red cells, one unit of amboceptor and salt solution to 1.3 c.c. If the particular serum contains sufficient complement to hemolyze 0.6 c.c. of cells so that 0.3 c.c. is used in the test, no salt solution is added. The control tube always clears. If the maximum amount of cells is used as determined in the series, for instance, 0.6 c.c., the control tube often will not clear with negative serum. If complete hemolysis does not occur in any of the series of tubes, it signifies no complement.

My purpose of describing this test is to state that it is unsatisfactory as compared with the Wassermann reaction, using the antihuman system. When applied in this manner the human complement apparently is not as easily fixed as is the guinea-pig complement as used in the Wassermann reaction. The use of guinea-pig red blood cells to determine the

hemolytic index of human serum, and with this means determine the syphilitic factor of the serum, gives a much higher percentage of positive results than the test described above, but the guinea-pig system does not give any higher percentage of positive results than the Wassermann using the antihuman system.

JOHN FUNKÉ, M.D., Atlanta, Ga.

LOW TYPHOID DEATH RATE OF RICHMOND, VA.

To the Editor:—I wish to express my gratification in connection with what you have to say concerning Richmond's 1919 typhoid record (THE JOURNAL, March 6, 1920, p. 672). I am glad that you agree that our rate of 3.7 is quite an extraordinary one for a Southern city.

It is gratifying to see in Table 6 that Richmond is the only city south of the Potomac and Ohio rivers appearing in the first rank, and that even those Southern cities which appear in the second rank come in at the tail end, while the third rank and fourth rank are composed entirely of Southern cities. In other words, if the cities of over 100,000 population are ranged in the order of their typhoid death rates, Southern cities, with the exception of Richmond, are found entirely at the bottom.

Your statement that "it is evident that the maintenance of a low typhoid death rate is not to be taken as a matter of course without the exertion of constant vigilance by the local health authorities" is certainly true. I know that in the case of Richmond our constantly decreasing rate has been due to constant effort and watchfulness. This year we shall have a hard job holding down to last year, and, in fact, there is little, if any, chance of our duplicating our 1919 rate. Unfortunately, our first three cases this year all terminated fatally, and besides this, we have had one more death, so that, although only seven cases have been reported this year, we have already had four deaths, against a total of six in 1919.

As an illustration of the desire on our part to have accuracy at all cost, I may state that the death certificate in the case last mentioned came in to us with influenza and septicemia given as the cause of death. The blood specimen taken on the last day of illness, however, showed the presence of the typhoid bacillus. We had considerable difficulty in persuading the physician to change his diagnosis to typhoid fever, but eventually accomplished this object.

When I entered office in 1906, every physician with an average practice treated at least half a dozen typhoid cases every summer, and our busiest practitioners counted it a poor year when they did not have twice that many cases. In recent years we have had only about one case to every three or four physicians, and scarcely this number in private practice. One result of this, I fear, is going to be that the average physician will not see enough typhoid fever to become reasonably skilful in its handling, and this may result in an increased case fatality. This can be obviated only by hospitalization of all typhoid cases, a course which has many other things to commend it.

E. C. LEVY, M.D., Richmond, Va.
Director of Public Welfare.

"HITHERTO UNDESCRIBED SIGN IN DIAGNOSIS OF LETHARGIC ENCEPHALITIS"

To the Editor:—I was much interested in the description by Dr. Thomas F. Reilly (THE JOURNAL, March 13, 1920, p. 735) of a hitherto undescribed sign in lethargic encephalitis. This sign (the abnormal involuntary twitching of muscle bundles) was apparently not present in last year's epidemic, but has been noted with regular frequency in the cases coming under observation this year. There are apparently three types of influenzal invasion of the central nervous system which have, as a distinguishing feature in common, these myoclonic movements: One type is associated with a diffuse neuralgic syndrome, toxic delirium and a fatal termination. Another type presents only myoclonic movements and a neuralgic syndrome which proceeds to an early recovery. The third type presents the foregoing symptoms, which after a variable time become merged into a pure syndrome of lethargic encephalitis. There is no doubt that all these phenomena are simply the expression of the same infectious agent.

Dr. Reilly considers the term "lethargic" unfortunate, as the condition of the patient belies the designation. In this connection I would consider the term "encephalitis" equally misleading. I refer particularly to those cases which present only diffuse myoclonic movements and neuralgic symptoms. As stated before, this type of case reveals no evidence of "encephalitis" on close scrutiny. Lethargic encephalitis is becoming a sort of junk-heap on which every infection with neural manifestations is being dumped. In the interest of scientific and clinical accuracy, a revision of the nomenclature would indeed be welcome.

CHARLES ROSENHECK, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SYRUP OF THYME

To the Editor:—A short time ago I received a sample of "Pertussin" and used some in an obstinate case of bronchitis with excellent results. I have since received a catalog from a pharmaceutical firm, which advertises syrup of thyme. I have searched for a formula to make my own syrup of thyme, but have not been able to find one. Will you publish one?

E. F. BENNER, M.D., Salfordville, Pa.

ANSWER.—The subjoined formula yields a product very similar to "Pertussin" in taste, flavor, composition, and probably in activity as well:

Fluidextract of thyme	15 c.c.
Glycerin	15 c.c.
Syrup to make	100 c.c.

The original German preparation contained 1.5 gm. of sodium bromid in each hundred cubic centimeters, and this might be added to the foregoing formula with advantage, so far as action is concerned. However, a sample of "Pertussin" purchased in the open market in the United States failed to respond to tests for bromids.

As fluidextract of thyme is not official, this formula is presented as furnishing an acceptable preparation:

Thyme, in No. 60 powder	100 gm.

Moisten with a mixture of:

Water	25 c.c.
Alcohol	15 c.c.
Glycerin	10 c.c.

After standing five hours, pack in a percolator. Exhaust with a menstruum of alcohol, 1 volume, and water, 3 volumes. Reserve the first 85 c.c. of percolate. Concentrate the weak percolate to a soft extract and dissolve in the reserved portion. Make up to 100 c.c. by addition of a mixture of alcohol, 1 volume, and water, 3 volumes.

Other aromatic expectorants, such as terebene, terpin hydrate or creosote, might be expected to have similar but greater effect in chronic bronchitis.

Care of the Eyes.—To read or study when tired or drowsy is to strain the eyes to a dangerous degree. Avoid evening study whenever possible. If you are using your eyes by artificial light, be sure the light does not shine directly into the eyes, and try to have it come from behind and to the left side so as to avoid the harmful glare. Never sit with the gas or electric light directly in front of you. If electric light is used, the bulbs should be wholly or partly frosted. The best form of artificial illumination for the eyes is the so-called indirect system, where the light is reflected from the ceiling and walls of the room in a soft glow and where all glare is entirely hidden by an opaque shield.—W. M. Carhart, *Pub. Health*, Michigan, September, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Kansas February and June Examinations

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 11, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Fourteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
University of Illinois		(1919)	1
St. Louis University		(1918)	1
Meharry Medical College		(1918)	2
College	**LICENSED BY RECIPROCITY**	**Year Grad.**	**Reciprocity with**
Hering Medical College, Chicago		(1909)	Oklahoma
Loyola University		(1916)	Illinois
Rush Medical College		(1914)	Missouri
State University of Iowa College of Medicine		(1904)	Iowa
University of Kansas		(1918)	Missouri
American Medical College		(1911), (1912)	Missouri
Missouri Medical College		(1885) Missouri, (1894)	W. Virginia
St. Louis University		(1912)	Oklahoma
University of Oklahoma		(1918)	Oklahoma
Meharry Medical College		(1918)	Kentucky
Vanderbilt University		(1916)	Tennessee
Baylor University		(1916)	Texas

Dr. Dykes also reports the written examination held at Topeka, June 17, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 31 candidates examined, 28 passed and 3 failed. Twelve candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Gross Medical College		(1901)	1
Northwestern University		(1919)*	1
University of Kansas		(1919)	20
University of Louisville		(1907)	1
Medical School of Maine		(1895)	1
Harvard University		(1918)	1
Barnes Medical College		(1904)	1
John A. Creighton Medical College		(1919)	1
University of Oklahoma		(1913)	1
	FAILED		
Beaumont Hospital Medical College		(1902)	1
Kansas City Medical College		(1901)	1
University of Heidelberg		(1914)†	1
College	**LICENSED BY RECIPROCITY**	**Year Grad.**	**Reciprocity with**
Georgetown University		(1906)	Dist. Colum.
University of Illinois		(1916)	Illinois
Tulane University		(1917)	Louisiana
St. Louis Coll. of Phys. & Surgs.	(1888) Oklahoma, (1902)		Illinois
	(1908) New Mexico, (1918)		Missouri
St. Louis University		(1916)	Missouri
Washington University		(1915), (1917)	Missouri
University of Nashville		(1899)	Kentucky
Marquette University		(1915)	Wisconsin

Dr. Dykes also reports that 31 candidates, including 1 undergraduate, were licensed by reciprocity at the meeting held at Topeka, Oct. 14, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1909)	Texas
Chicago College of Med. and Surg.	(1914), (1916),	(1918)	Illinois
College of Phys. and Surgs., Chicago		(1903)	Illinois
Northwestern University	(1905), (1917, 2)		Illinois
Rush Medical College	(1912), (1919)		Illinois
University of Illinois		(1916)	Illinois
Central Coll. of Phys. and Surgs., Indianapolis		(1904)	Indiana
Louisville Medical College		(1907)	Kentucky
Tulane University		(1916)	Louisiana
Baltimore Medical College		(1908)	Maine
Barnes Medical College		(1911)	Tennessee
St. Louis University		(1917), (1919)	Missouri
University Medical Coll. of Kansas City		(1910)	Missouri
Washington University	(1909), (1910),	(1918)	Missouri
John A. Creighton Medical College		(1906)	Oklahoma
		(1916)	Nebraska
University of Oklahoma	(1916) Utah,	(1917)	Oklahoma
University of Pennsylvania		(1910)	Penna.
College of Phys. and Surgs., Memphis		(1911)	Tennessee
University of West Tennessee		(1910)	Oklahoma
Vanderbilt University		(1916)	Tennessee
Undergraduate			Oklahoma

*Diploma withheld pending completion of hospital internship.
†Graduation not verified.

Georgia October Examination

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 14-15, 1919. The examination covered 10 subjections and included 100 questions An average of 80 per cent. was required to pass. Of the 14 candidates examined, 13 passed and 1 failed. Twenty-one candidates were licensed by reciprocity. One candidate, a graduate of the University of Virginia in 1917, was licensed on presentation of a certificate from the National Board of Medical Examiners. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1915)	80.9
Chicago College of Medicine and Surgery		(1917)	87.3
Loyola University		(1919)	90.3
Tulane University		(1915)	89.4
Johns Hopkins University		(1919)	86.2
University of Maryland		(1916)	88.9
Tufts College Medical School		(1919)	84.7
University of Pennsylvania		(1916)	87.2
Med. Coll. of the State of So. Carolina	(1881)	81.6, (1917)	88.4
Vanderbilt University		(1914)	92.1
Medical College of Virginia		(1919)	83.8
University of Virginia		(1917)	85.7
	FAILED		
Southern College of Medicine and Surgery		(1913)	68.4
College	**LICENSED BY RECIPROCITY**	**Year Grad.**	**Reciprocity with**
University of Alabama		(1904)	Alabama
Indiana University		(1914)	Indiana
Tulane University	(1916), (1919, 2)		Louisiana
Johns Hopkins University (1910) Alabama, (1912),		(1913), (1916),	(1917) Maryland
University of Maryland		(1915)	Maryland
University of Minnesota		(1894)	Minnesota
University Medical College of Kansas City		(1908)	Kansas
Jefferson Medical College		(1907)	Penna.
University of Pennsylvania		(1916)	Penna.
Meharry Medical College		(1914)	Arkansas
Vanderbilt University	(1915), (1916, 2)		Tennessee
University College of Medicine, Richmond		(1901)	Virginia
University of Virginia		(1909)	Alabama

Nevada November Examination

Dr. Simeon L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 3-5, 1919. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1, a chiropractor, failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, San Francisco	(1918)		79.3, 83
College of Medical Evangelists		(1918)	94.2
University of Michigan Medical School		(1903)	92
St. Louis College of Physicians and Surgeons		(1918)	83.5
College	**LICENSED BY RECIPROCITY**	**Year Grad.**	**Reciprocity with**
Leland Stanford Junior University		(1919)	California
University of Southern California		(1903)	California
Northwestern University	(1910), (1912)		Illinois
College of Physicians and Surgeons, Baltimore		(1910)	Penna.
Homeopathic Medical College of Missouri		(1898)	Illinois
Bellevue Hospital Medical College		(1888)	W. Virginia

Social Medicine and Medical Economics

COMPULSORY HEALTH INSURANCE

M. L. HARRIS, M.D.
CHICAGO

In THE JOURNAL, March 6, attention was called[1] to the economic burden which workmen's compensation acts impose on the medical profession, owing to the inertia of the profession when it comes to economic matters. Tradition seems to have blinded the medical profession to everything but its work. Workmen's compensation acts were agitated publicly some time before they were made into laws, but physicians took no action in the matter. At the present time a proposition of much greater magnitude than workmen's compensation acts and of infinitely greater importance to the profession is being quite extensively agitated throughout the country, and unless the medical profession is alert it will wake up later to find itself again suffering under a burden from which it will be difficult or impossible to extricate itself.

THOSE INTERESTED IN HEALTH INSURANCE

Compulsory health insurance is one of the most important economic problems that has ever confronted the American people; therefore, it should be carefully studied in all its aspects. Without considerable thought and study, it is impossible for one fully to comprehend the magnitude of the undertaking. There is scarcely a class of persons who would not be affected more or less directly by it. There would be the great hordes of independent, free thinking individuals, who would be compelled to accept and pay for the insurance, whether they wanted it or not; the thousands of industries that would be forced to contribute to the fund; the medical profession that would be obliged to assume the responsibility of carrying out the terms of the insurance; the innumerable officials composing the working machinery, and finally, everybody else who would be taxed for the enormous upkeep of it all. The effect that a scheme of this kind would have on each of these groups is a study by itself. It is by no means clear that it would be an advantage even to the class that it is intended to benefit.

INDIVIDUALISM

That good health and a good physique are most desirable qualities in an individual and even essential to the welfare of a nation will be admitted without argument; hence, no time need be wasted on that phase of the subject; but if the events of the last few years have taught us anything, they have taught us that individualism is likewise an essential qualification of a people's greatness. Individualism, independence, freedom of thought and action are necessary to the upbuilding of a race of people sufficiently resourceful to meet successfully all the obligations and duties of life. Every time the state relieves the individual of a responsibility in life, it weakens the individual's character, which must inevitably react detrimentally on the evolutionary development of the people. The only restrictions to individualism which should be enforced are those made necessary by community existence, and that is too elementary a subject to require consideration here.

Before discussing further the effects of compulsory laws on the development of the individual, let us review briefly the arguments of the proponents of compulsory health insurance. The statement is frequently made that compulsory health insurance is but another step in the same direction as workmen's compensation acts, and if the latter are sound in principle and beneficial in their effects, the former, being but a step forward in the same direction, must likewise be sound in principle and beneficial in its effects. This conclusion is erroneous because of a lack of relation between the premises. The principle underlying workmen's compensation acts is definite and distinct, namely, injuries to workmen arising out of, and in the course of, their employment are a direct charge on the cost of production; but no such principle underlies compulsory health insurance. If accidental injuries to workmen were always preventable, it would be the duty of the state to enforce such rules and regulations as would effectually prevent their occurrence, instead of enacting laws to compensate the workmen in some manner for the damage done. It would not only be much cheaper to prevent the damage but infinitely more humane.

Arguing along this line, the proponents of compulsory health insurance claim that as some diseases may be directly connected with the character of the work, all diseases in workmen should be compensated for the same as accidental injuries. There are many fallacies in this line of argument. In the first place, the diseases which are directly caused by the character of the work are very few indeed, and these can be readily prevented by proper working conditions. If a disease can be prevented by having proper working conditions, it is plainly the duty of the state to see that such conditions are provided, and not tax the people to cure a disease when it would be much easier and cheaper to prevent it. If there should be a disease which was caused directly by a particular line of work in an industry, and it were not preventable, then the care of a workman thus made ill should be a direct charge on the cost of production in the same manner as an accidental injury.

INFLUENCE OF ECONOMIC CONDITIONS

Much has been written about economic conditions and the influence which they may have in causing disease. Among these may be mentioned working conditions which cause fatigue; morbidity and mortality statistics according to occupation; effects of irregular employment on health; inadequate diet; bad housing conditions and overcrowding, and unfavorable community environment. It will be admitted that these conditions and others that might be mentioned may be factors of greater or lesser degree in the causation of some diseases, but it is not shown that compulsory health insurance would modify or change any of these conditions or in any way mitigate their effects. Bad housing conditions and overcrowding, unhealthful working conditions, and unfavorable community environment are all matters which are, or should be, under the supervision of municipal and state public health departments; irregular employment and unemployment are industrial problems, and inadequate and improper diet are matters of intelligence and education. A lack of intelligence and of education, both general and moral, and a disregard by the educated, as well as the uneducated, of the ordinary common sense rules of hygiene are much greater causative factors in the production of disease than all of those previously mentioned, but it is impossible to legislate effectually against conditions such as these. Certainly compulsory health insurance would be more likely to increase than to decrease the tendency to them, by reason of the removal of restraint and responsibility.

PREVENTIVE MEDICINE, THE PROPER ACTIVITY OF THE STATE

Wages and poverty and disease are familiar terms much used in the discussion of this subject. Wages below a certain point, which, though relative, is always definable, spell poverty, and morbidity and wages are associated within certain limitations in inverse ratio. The lower the wage, the

1. Harris, M. L.: The Physician's Burden Under Workmen's Compensation Acts, J. A. M. A. 74: 694 (March 6) 1920.

higher the morbidity; as wages rise, morbidity falls, until it reaches what may be termed the "normal" rate. Other things being equal, this ratio between wages and morbidity in general terms is quite constant. The point at which the normal morbidity line crosses the wage line indicates what may be called a living wage. It is recognized that this is not a fixed point for all individuals, or for all classes of individuals; but when dealing with numbers, the principle holds good. When the wage or the income falls below the point mentioned, poverty begins, and sickness increases. With increased sickness comes a further decrease in income, and consequently greater poverty. Thus a vicious circle becomes established, from which it is often difficult to escape.

These are fundamental facts in economics. The question now arises: What should be done to help those whose income falls below the normal living wage and who thereby suffer from increased morbidity? It is plainly the duty of the state to study this problem and to solve it if possible. Shall the state by a system of compulsory medical treatment simply attempt to cure the ills of the unfortunate, or shall it, by proper preventive measures and by aiding in the adjustment of sociological and industrial conditions, enable the people to rise to or above the normal income point, so that they may, by their own resources, fulfil their responsibilities and obligations in life? Viewed from the standpoint of the ultimate good of the people, it would seem that there can be no question as to the course the state should pursue. If the state will extend the work of its health department to a legitimate extent along the line of preventive medicine and endeavor to correct insanitary working and housing conditions and educate the public in personal hygiene, there will be no occasion for compulsory health insurance. These are all legitimate functions of the state. There are certain responsibilities and obligations in life that must always rest with the individual if he would remain free; and when the state attempts to assume these, even though it may seem expedient at the time, it does so to the eventual detriment of the individual.

The statistics of the draft showing physical defects sufficient to disqualify for the army in about 30 per cent. of the young men of this country is often used as an argument in favor of compulsory health insurance. It should be remembered, however, that ours was a select army, and only the most perfect specimens of manhood were taken. It does not mean that all those rejected were unfit for the usual occupations of life. The largest single cause of rejection was defective vision, due simply to errors of refraction, a condition which may be relieved by the use of glasses but which cannot be prevented or cured. The defects were found among the rich who have always been well taken care of medically, as well as among the poor; hence it is perfectly evident that compulsory health insurance would not have prevented the defects, but some of them might have been obviated by a reasonable amount of proper physical training. The same kinds of defects were found with equal frequency in men of the countries which have been the longest under compulsory health insurance; on the other hand, no finer specimens of young manhood, both physically and mentally, ever formed an army than composed the American Expeditionary Forces. It is certain, therefore, that compulsory health insurance finds no support in the draft statistics.

LOCAL NATURE OF THE DISPENSARY PROBLEM

There are a few eminent members of our profession who believe compulsory health insurance to be desirable. These gentlemen have studied the subject from the point of view of the large city dispensary and clinic. They see a large number of poor people who visit these dispensaries daily and who, they believe, are not receiving adequate medical treatment. They argue that if all these patients were insured they would be able to pay the dispensaries for their treatments; the dispensaries would then be able to build up larger institutions, which could pay the attending physicians for their services, and thus provide the sick with better collective medical care. Any one who is familiar with the dispensary evil and the suffering of the poor in the tenement districts of large cities will appreciate the point of view of the gentlemen who earnestly desire the betterment of the condition of these people; but isn't the dispensary question rather a local one? The same conditions certainly do not obtain throughout the country or even throughout a state. The commissions that have been appointed by several of the states to investigate the question of health insurance report that conditions vary greatly in different states and in different parts of the same state, and some of the commissions see no necessity for the adoption of compulsory health insurance. It will be admitted that the dispensary question and inadequate medical care of the poor in large cities are serious problems, and it is even possible that compulsory health insurance might bring temporary relief; but it would be at the expense of future harm. In matters of such weighty importance, isn't it a short-sighted policy that acts only for today and disregards tomorrow? Why should a measure that is ultimately detrimental in its effects be imposed on an entire country or state for the temporary relief of a condition that is local, and which should be remedied by prevention rather than cure? It should not be inferred from this that there are no poor in small communities; but the conditions are very different from those existing in large cities. Again, no measure of the magnitude and importance of compulsory health insurance, the effects of which are in any way doubtful, should be thrust on a people, for it is a well known fact that a principle once written into the law seldom becomes erased, and the baneful influence of such laws are cumulative, and eventually drag a people down.

In a subsequent article the effects of compulsory health insurance on the medical profession will be discussed.

Medicolegal

Osteopath Not a Physician

(Ex parte Rust (Calif.), 183 Pac. R. 548)

The Supreme Court of California, in denying in this habeas corpus proceeding the petitioner's application for release from custody on a conviction of violating the optometry law, says that he was licensed in 1907 to practice osteopathy, and contended that he was a physician and was entitled to practice optometry by reason of the exception contained in the optometry law that its provisions should not be construed to prevent duly licensed physicians and surgeons from treating or fitting glasses to the human eye. To support his contention that the practice of osteopathy was the practice of medicine, and hence that he was a physician, the petitioner relied on the general definition of a physician as one who practices the art of healing, and on cases in which those engaged in the practice of osteopathy have been held guilty of violating laws regulating the practice of medicine. He also claimed that he was a "physician" practicing "medicine" within the meaning of the Medical Act of 1901, in force at the time his license to practice osteopathy was issued, which provided that those, among others, should be deemed as practicing medicine or surgery within the meaning of this act who, for a pecuniary or valuable consideration, "perform any operation for the relief or cure of any bodily injury or disease." The question thus raised was not free from difficulty, for the reason that neither the medical act of 1876 nor any of the succeeding acts defines a "physician" or "surgeon," or a "physician and surgeon," or expressly provides for the

license of a "physician." The optometry law of 1903, in stating the exception, is similar to that of 1913, as is the amendment of 1907, in using the term "physician and surgeon"; but the amendment thereto in 1909 uses the expression "physician or surgeon." There was therefore some basis for the claim that at the time of the issuance of the petitioner's license (March 6, 1907) these terms "physician" and "surgeon," not being defined by statute, should be construed in their broad and general acceptation. However, the same legislature which adopted the optometry law of 1913 also adopted a law regulating the practice of all systems of healing. By this law provision was made for the issuance of a certificate known as a "physician and surgeon's" certificate, and another to be known as a "drugless practitioner's" certificate, the latter certificate covering the right to practice osteopathy; and the court holds that the provision of the optometry law of 1913 mentioned above refers to those holding a "physician and surgeon's certificate," as authorized by the medical act of the same year. Moreover, the court thinks it fairly apparent that the legislature has, in effect, always used the terms "physician" or "surgeon" and "physician and surgeon" as applied to those practicing medicine and surgery within the meaning of the various medical acts, as contradistinguished from the practitioners of osteopathy. Wherefore, the court holds that the license of the petitioner, although issued before the optometry act and the medical act of 1913, did not authorize him to practice optometry under the exception in favor of physicians and surgeons. Nor did the license to practice osteopathy issued under the law of 1901 authorize the licensee to practice every known healing art which did not involve the use of drugs, or major surgery, including optometry. The present laws authorize the petitioner to practice osteopathy, and nothing more, by reason of his license issued under the law of 1901. The court cannot say that the science of osteopathy includes optometry. The discrimination between the holder of a physician and surgeon's certificate and the holder of a certificate to practice osteopathy is not unreasonable, for it is based on different training.

Paralysis of Face Following Mastoid Operation

(Finke v. Hess (Wis.), 174 N. W. R. 466)

The Supreme Court of Wisconsin, in affirming a judgment on a verdict directed for the defendant in this action for alleged malpractice, says that it was insisted by the plaintiff that the defendant, in performing a mastoid operation, severed the seventh or facial nerve. At the close of the evidence, a verdict was directed for the defendant. The question was whether there was sufficient evidence to carry the case to the jury. Paralysis of the face was shown, and there was evidence that severance of the nerves would cause such condition. But the evidence also showed that the paralysis might, from other causes, well follow an operation skilfully and properly performed. It was shown that paralysis might have been caused by a dehiscence, or by bandaging after the operation, or by cold drafts, and possibly other causes. In order to warrant the court in submitting the case to the jury there must be some evidence that the defendant severed the facial nerve, and there was none in the record. On the other hand, there was positive evidence, not only by the defendant, but also by a specialist of Chicago, who opened up the old scar in an effort to relieve pressure on the nerve, that the nerve was not severed. It was contended that this specialist admitted that the nerve was severed, but the evidence did not support that contention. It was based on the testimony of a woman, but her evidence as to what the specialist said when he was not under oath was not competent, except as laying a foundation for impeachment. Moreover, she admitted on cross-examination that the specialist might have said that the nerve was injured, not severed. Some reliance was placed on the opinion of another physician, but his opinion could not raise a conflict with the positive undisputed evidence that the nerve was not severed, and that other causes existed for the paralysis. Proof of a bad result raised no presumption of negligence in this case.

Society Proceedings

COMING MEETINGS

American Medical Association, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Association of Physicians, Atlantic City, May 4-5.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
West Virginia State Medical Association, Parkersburg, May 18-20.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

(Continued from page 826)

Research in the Teaching Laboratories

Dr. Oscar Klotz, Pittsburgh: My plea is for a closer cooperation of the various laboratories in modern medical schools. We are still working under the handicap of the tradition of the past, when the researches were undertaken by isolated individuals in apartments with closed doors. There are many problems of medical research which can be carried out equally well, without regard to the location of the institution. Certain necessary factors are essential: the personnel, the laboratory with all its accessories, and a library. But there are other problems which do not lend themselves to this ready approach. The yellow fever problem could not have been undertaken in Canada, nor industrial diseases in Washington. The present time lends itself very well to directing the energies of our laboratory system in the study of problems most nearly related to the local community life. For example, there is no better place to continue the study of shock than in our large industrial centers. The tropical and subtropical diseases logically belong to the South and the large seaport towns in close commercial contact with endemic centers. Can we not make greater headway by studying the questions which lie at our door? Jenner's opportunity was just such a one. Against advocating such a plan, and one whose disposition would best be placed in the hands of the National Research Council, may be brought the argument that we should be forgetting the emphasis to be laid on a study of the everyday fundamentals related to less localized problems. It is not intended to advocate the restricting of the activities of any one or group of individuals to concrete practical problems, but that each would also continue his investigations in the field of his personal choice. Moreover, the correlation of two such

divergent fields of investigation would tend to make the researchers broader men.

Problems for investigation and the opportunity for attacking them lie before every department of our medical schools, and there can remain only two reasons why more is not accomplished: We "cannot make brick without straw," and although our universities are realizing the value of research and are making the facilities available as quickly as funds will permit, this in not a few institutions has been a slow process. Rarely does a university appreciate the value of research to an extent to add to the departmental budgets money to be devoted for this purpose. The endowment of research fellowships within the teaching departments is to be encouraged, and sufficient money to provide the necessary equipment must be urged. Some schools of medicine have found it easier to obtain a research budget by establishing certain definite research departments whose personnel has no teaching responsibility nor a working relation to any particular department in the institution.

A word about undergraduate research in the medical sciences: From time to time a plea has been made by medical educators for the recognition of student researches, either as a part of their laboratory exercises or as a final thesis prior to graduation. Student research is distinctly different from the research performed by the graduate scholar. For the undergraduate, the carrying out or verifying of a technic previously devised, or his acting in the capacity of personal assistant to his instructor, may be perfectly adequate methods of training for research. It is inadvisable to assign true research problems to the undergraduate not only because of his inadequate training but also because of his essential studies in other departments. However, the summer months often offer an opportunity for the occasional student, and advantage is taken of this.

What is true of the fifth year in the hospitals may also apply to the laboratories of the teaching departments of medical schools. It should be possible in all states to credit work done in the fifth year under the direction of the medical school laboratories at the same rating as the hospital service. With such an arrangement it would be possible to produce a larger number of scientifically trained men for practice, and give them their first real insight into original laboratory research.

Research in Clinical Medicine

Dr. G. Canby Robinson, St. Louis: The establishment of clinical medicine on a university basis necessitates a revision of the usual divisions of the subject. Internal medicine, pediatrics, surgery and the specialties which have grown up about them must be brought close together, and all must be considered part of the science of clinical medicine, the study of disease in living human beings. The technic of treatment has made the division into the various groups desirable and necessary, and this division must be maintained. On the other hand, the study of all human disease affecting all organs of the body must be included in the science of clinical medicine and be pervaded by the same spirit of scientific research. No special consideration should be reserved for internal medicine which is not shared by surgery and by all the medical and surgical specialties. Obstetrics is excluded by our definition, but only so far as childbearing is to be excluded as a disease. There are many medical problems associated with it.

The department of clinical medicine should consist of a group of men which, by virtue of the special training of its individual members, can bring to bear on the problems of disease a knowledge of all the ancillary or contributing sciences. It is essential that there be men trained in chemical, physiologic, bacteriologic and biologic methods who have a knowledge of the present day conceptions of these sciences. Physical chemistry and physics are also becoming more and more necessary for the solution of clinical medical problems. This group of men must work together as a team, in order to bring research to its greatest development. That this is now being done is one of the most hopeful signs. The unit system, as the English call it, has great possibilities. The group must be presided over by a man who has gained the headship of the department by virtue of scientific attainments and achievements, and because of demonstrated ability in the performance of the manifold duties he is called on to discharge. He should be alive to the contribution which each member of the group can make. He should not only coordinate the whole department, and himself participate in research, but he should also bring each member of the department and his work into sufficient intimacy with all the other members so that the entire group will go forward together in the study of clinical medicine.

The facilities necessary for the development of a university department of clinical medicine consist in an adequate hospital and outpatient plant under the control of the head of the department, and organized especially for carrying out the primary objects of the department, namely, research and teaching. The department must be built up about this plant and the needed laboratories and accessories must be conveniently placed and adequately equipped. It is very desirable that the hospital wards should constitute an integral part of the department. Even the most carefully planned affiliation between the university and a hospital controlled by an outside board of trustees may prove to have its disadvantages, no matter how much in accord each party in the agreement may be.

If research is recognized as an essential factor in education, then every effort should be made to foster it from this point of view alone. If clinical medicine is to be developed along the lines indicated in this paper, there can remain no arguments relating to the desirability of the so-called whole-time plan of clinical teaching. The head of the department and the principal members of the staff must devote their entire time to the demands of the hospital and laboratories and to the training, directing and teaching of the younger students. The salaries of men devoting themselves to research and teaching of clinical medicine should be adequate for their needs, and should be adjusted with consideration for the many added duties and responsibilities that arise from their care of and contact with sick and injured persons.

DISCUSSION

Mr. Abraham Flexner, New York: Nothing is too good in respect to ideals and equipment, facilities and resources for a medical school. A practical question in connection with the realization of any of these ideals or standards or criteria, is how, in a country in which educational funds are derived as they are in America, these things are to be paid for. We have told these medical schools what they ought to do and what to have in the way of equipment and facilities to remain in good standing. They have said: "That is all very well, but consider what these things cost, and who is going to pay for them?" The Council on Medical Education is the main factor in setting up criteria as to what is decent and desirable in respect to medical schools, but it has not yet, so far as I know, created a committee on finance which will help these schools in different parts of the country to find the means to do the things which the Council assures them ought to be done. The situation is different from that which exists, for instance, in Germany, where the government tells the medical school what it ought to do and what it ought to be, and then says, "Here is the money with which to do it." One of the devices that the Council on Medical Education early and properly resorted to in the efforts to secure ultimately the funds needed to finance medical schools was to take the position that a properly equipped, endowed and thorough medical school ought to be a department of a university. It does not mean that all medical schools have got immediately to be of one type. This is quite possible in Germany, where they have a sort of paternalistic government that does things, to which there is no opposition, to carry out these things on a more or less uniform basis; but in a country in which higher education is developed, as in American, that is physically impossible. We have enormous discrepancies in both private and taxable wealth; we have enormous discrepancies in public sentiment; and it is impossible for a public educational system, or a university system, to detach itself completely from these

varying local conditions. We must therefore accept the fact that for many years we are not going to have in America, in all probability, short of a miracle, of which I see no signs, standardized medical schools, but we are going to have considerable varieties. We hope to embody minimum standards in the way of preparation of students, preparation of teachers, and facilities, laboratory and clinical; but there is going to be a much greater discrepancy in this country for a long time to come than existed in Germany, where homogeneity was brought about by the leveling and elevating action of a powerful central government. I am a believer in the virtues of the full-time plan under certain conditions. It has never entered my mind that there will be in this country for a long time to come anything like a general uniform movement toward the installation of a rigid full-time plan in clinical branches. The fact of the matter is that the full-time plan covers relatively a small part of the activities of either school or hospital. It is, I think, a luxury, if we may call it so, to develop the highest possible improvement, because it promises to promote scientific development, to produce an improved teacher and investigator, and perhaps gradually to raise the entire level; but any premature movement toward the attainment of this end would in my judgment be a great mistake.

DR. FRANK BILLINGS, Chicago: Dr. Jessup did not mention some of the factors and functions of a state university when he omitted the question of prevention. I do not think he used the word prevention throughout his paper. During the last year the Illinois legislature enacted a law which enabled the state to go forward with the reconstruction and rehabilitation of the crippled. It defines those who are disabled as not only those injured but those who are disqualified because of disease, and those who were interested in the passage of that bill had no word put in it concerning prevention. One wonders, therefore, if in the function of the state through its university or officials we are going to care for the disabled without any question as to the prevention of these things, as was done so well in the army during the war.

The full-time clinical teaching policy originated twenty-two years ago in the brain of Dr. William R. Harper, who, as president of the University of Chicago, became interested in medical teaching. The founder of the University of Chicago, and the board of trustees at that time were not in favor of it; but President Harper persisted in a thing which he considered right, and hence Rush Medical College became affiliated with the University of Chicago. In this way President Harper thought he could more quickly carry out his ideas of medical teaching. He advanced the requirements for admission to that medical school rapidly. In 1902 he presented a proposition to the board of trustees, which was accepted, of making the university medical school with full-time teachers. I have been an advocate of full-time medical teaching since that time.

DR. J. WHITRIDGE WILLIAMS, Baltimore: The reason the full-time scheme became necessary was because, as Dr. Bevan has said, the men who attended to their business, giving half of their time to business, and the other half to teaching, knew perfectly well at the end of the year that they had done their duty neither to the university nor to their patients. The really provocative thing for the full-time plan was the fact that many of our best clinicians were financial hogs and prostituted their university positions for money, and expected their younger colleagues to do the work which they capitalized. We have had the full-time scheme in operation in Johns Hopkins for a number of years, and I have no hesitation in saying that, on the whole, it has been an unqualified success. Nothing is perfect, but there is no doubt about the general success of it.

DR. O. F. HENDERSON, Toronto, Ont.: If we are going to teach fifty or a hundred students adequately with only full-time men, it will mean a very large budget in the way of salaries, etc. I think it will be some time before we shall be able to carry out a full-time scheme on an extensive scale.

DR. RAY LYMAN WILBUR, Leland Stanford University, Calif.: One difficulty we have to contend with is the confusion between college and university. We have comparatively few universities and comparatively few university men in the United States. The larger proportion are college men. The college teacher does not understand a medical school. The university teacher understands a medical school. There is a distinct difference in the type of men. Most of the criticism of medical schools comes from the college type of teacher. The same thing is true of members of boards of trustees in various institutions. I was much interested in what Dr. Flexner said about medical schools being taken over by universities, because I happened to have the unique position of being an individual who held a flirtation with the university, and now I have an opportunity to take care of a medical school, and while it has distinct problems of its own, it is probably the most pleasant duty I know of. There should be some definite, tangible result of the full personal service type rendered by the clinician. In carrying out the full-time plan we must remember the point Dr. Billings brought out—leadership outside the walls of the hospital from the great clinicians just as we get leadership in all other fields. If we lose track of that, we shall develop specialized branches of medicine, men that will be college men that will be interested in the medical field. The university must keep in touch with everything that is going on and supply the leaders, and in medicine we must particularly keep that in mind.

DR. E. P. LYONS, Minneapolis: With regard to the full-time proposition, in thinking the matter over in our environment, I have been influenced mostly by the Mayo Clinic, where no patient is a private patient. All classes and types of patients go there. I should like to see in our school a big university clinic to which people can come and go. I should dislike to have the university give its services to people free who can afford to pay. I should like to see that clinic developed as a service to all people—everybody who wants to go there—and that brings me to the plan outlined by Dr. Darrach, according to which the fees from patients are paid to the clinic. I think it is perfectly possible with that ideal in mind to have such a distribution that every man who is immediately taking care of an individual case will have the advantages of all the specialties, the laboratory and clinical departments, that can be of any assistance to him. The patient should not be referred from one specialist to another, receiving a separate bill from each specialist, but should have one bill for the whole work. That would be the scheme I would formulate to accomplish if I could in the University of Minnesota, and the only objection to it would come from the medical profession itself.

DR. ARTHUR DEAN BEVAN, Chicago: I am very optimistic. I think we are making wonderful progress. Mr. Pritchett told us a few years ago that we had accomplished more for education by these annual conferences than had been done by any other agency during the same period. The problem of inducting a medical school into a university is a difficult one, because medicine is more than a science. If it were simply a science it would be a simple matter to introduce it into a university and handle it without difficulty, just as the science of physics is handled; but it is an art, and it is a profession by which men make their livelihood. We cannot practice medicine as we would make matches or make shoes. We cannot practice medicine by machinery. There is an enormous personal element in medicine. We should attempt to develop our medical schools on business-like, commonsense, economical lines, and make such a combination with a great state for the interests of the people of the state as has been made in Iowa between the hospital that takes care of the people of the state and the medical school. I think that is a splendid scheme and should be copied widely wherever it is feasible.

Coordination of Effort in Medical Licensure

DR. DAVID A. STRICKLER, Denver: It should be the effort of every board to make it easily possible for a good man to obtain a license in any state and vice versa, increasingly difficult for a bad man to extend his field of labor. Each state must determine for itself the value of credentials presented; but in the matter of practice record, moral character and

those qualities which make the man and citizen, very important information may be best ascertained by his home board, the endorsement of which, under proper conditions, should mean much to the individual and to the board receiving it. My plea is for an interstate endorsement which shall represent the facts as they are ascertained on investigation or as based on personal knowledge of the executive officer, and not simply a statement of what the records show, though this should be included when of value to the board which is to determine whether a license shall or shall not be issued.

It has seemed to me that with the consistent efforts of the Council of Medical Education of the American Medical Association, combined with the Association of American Medical Colleges and other like bodies from the homeopathic and eclectic schools, a standard should be reached which may be accepted as evidence of medical knowledge without requiring an examination each time a man from choice or necessity changes his residence to a new state.

Report of Committee on Graduate Medical Education in the United States

DR. LOUIS B. WILSON, Rochester, Minn.: Owing to conditions since the war, probably 10,000 medical graduates sought opportunity for further study in 1919. This is probably three times the annual number in normal years. Probably 3,000 medical graduates are doing work in short courses in the United States during the current year. The supply of short courses in graduate schools is at present sufficient to take care of those seeking the kind of instruction offered, but probably more than as many more desire short courses of better grade. More good university schools might well offer opportunities for brief periods of study in limited fields to more adequately prepared general practitioners or practicing specialists.

Of 1,021 physicians recently requesting opportunity for graduate study for long terms, a large majority requested surgery. About one-sixth as many applied for medicine and one-tenth for otolaryngology. Only four applied for work in the fundamental medical sciences.

The average age at graduation of the 174 medical graduates in the University of Minnesota is 25.8 years, just a year less than the average age at graduation of the total number of graduates in 1916 from all medical schools which in 1912 required two or more years of collegiate work for entrance.

A questionnaire to representative men in special clinical fields shows that their average age at graduation was 24 years, though their average date of graduation was 1894. The respondents to this questionnaire advise a minimum of three years' graduate study after a year's general internship before beginning the practice of a clinical specialty. This is from one to two years less than the respondents themselves took for their own preparation. Of the respondents less than one-third as many advise foreign graduate medical study as had it during their own graduate preparation. Of the surgeons responding, half as many as had it advise special graduate work in anatomy. One-half more advise special work in pathology than had it. Of the internists, twice as many as had it advised special graduate work in biochemistry and physiology, and one-fourth less than had it advise special training in pathology. General practice preceding a specialty is advised by only 6 per cent. of the respondents. Seventy-six per cent. advise hospital residency or assistantship in the special field desired. Twenty-five per cent. advise assistantship to one specialist.

Attention is called to the urgent need of increasing the number of competent men in the fundamental medical sciences. To this end it is recommended that adequate endowments of teaching positions and fellowships be sought that full-time professorships in the fundamental medical sciences may pay the same salaries as proposed full-time professorships in surgery and internal medicine.

Interallied Medical Relations

DR. WALTER L. BIERRING, Des Moines, Iowa: The impressions gained by observation of the English plan of medical education are, first, that the fundamental and general education of the English physician is on a higher plane than his medical colleagues in the United States applying particularly to those graduating previous to 1912; second, the emphasis given to the practical application of pathology, bacteriology and anatomy in the qualifying examinations has led to a lessened interest in special research studies in pure pathology, pure bacteriology and the other fundamental medical sciences.

Medical licensure in Great Britain is distinctive and vested entirely in the general council of medical education and registration of the United Kingdom, established when the first comprehensive British medical practice act was enacted in 1858. The general council does not conduct any examinations, but it decides which medical schools are in good standing, and by means of inspectors appointed from its membership determines whether courses of study and the examination of the faculties of the different medical schools as well as the three qualifying boards are satisfactory.

This plan has certain distinct advantages, the final licensure examination is done away with; and with such a representative body as the general council, with excellent means of supervising medical teaching and qualifying examinations, it is eminently fair to the interests of the profession, and the public is well protected.

An entirely different situation obtains in France. Medical education and the right to practice medicine are entirely under the control of the state, the one being dependent on the other, as the conferring of the degree of Doctor of Medicine from an authorized French university carries with it the privilege to practice.

Interstate Relations in Medicine

MR. FRANCIS W. SHEPARDSON, Springfield, Ill.: In considering interstate relations in licensure for medicine it was not the purpose to discuss the subject of reciprocity which, on first thought, might be associated with the topic. Even a casual examination, however, of the various application blanks for reciprocity required by the boards of medical examiners of various states suggests that there is much yet to be done in this field before ideal conditions are secured. The blanks differ materially in their form, language and requirements. It is at least worth a question whether it might not be possible through interstate cooperation to secure a greater degree of uniformity in these blanks and a much simpler type of application than that now generally used.

These are some of the matters relating to interstate relations in medicine which it seems to me might be worthy of consideration. The need of harmony and united effort on the part of licensing authorities of adjacent states of the Union is apparent. Through such harmony and united effort many of the evils which have attended medical licensure in the past, some of which still exist, might be ended forever.

DISCUSSION

DR. ARTHUR DEAN BEVAN, Chicago: As chairman of the Council on Medical Education, I had the opportunity to inspect a number of these institutions with Dr. Wilson. From inspection of these graduate schools, the kindest thing that one can say is that they are entirely inadequate to perform the functions which seem at this time to be required. It is quite clear this work should not be done by independent schools or by commercial schools. There is a legitimate and growing demand for the right sort of graduate instruction. The reason we have the class of institutions that we now have is that the universities of the country have not done their duty. The problem clearly belongs to the medical departments of our universities.

DR. GEORGE H. MEEKER, Philadelphia: The University of Pennsylvania has been considering this subject for a number of years, and in 1916, as a result of this movement, the Medico-Chirurgical College of Philadelphia ceased to exist as an undergraduate institution. In 1918 the former Philadelphia Polyclinic and College for Graduates in Medicine similarly joined the movement, but the war prevented any real progress from being made. At present we are giving

what we believe to be meritorious courses in internal medicine, neurology, ophthalmology, and otolaryngology, each of four months' duration, and of intensive work leading to degrees or certificates. The aim of the university is to supply the tremendous demand, although there will have been 100 such men handled during the present university session. Under the plan which the committee has been preparing for the University of Pennsylvania, it will involve a deficit of $200,000 per annum. The income from students is estimated at a maximum of $10,000 per annum, which is hardly a paying proposition financially. The University of Pennsylvania has about two and a half million dollars already invested in this work, and has expended in preparation for it about $150,000 in equipment for teaching up to the present time, which by no means represents an idea of the final expenditure.

DR. HORACE D. ARNOLD, Boston: One point has not been sufficiently emphasized: Before the war a large number of our enterprising and best medical men were going to Germany and Austria for improvement in their medical knowledge and experience in various lines. Now that whole current has been disjointed by the war. Those men do not want to go to Germany and Austria at the present time, and yet that current is still in existence, and a number of men that have become interested in the improvement of their medical knowledge through the war experience are seeing and using better methods of dealing with the sick. They recognize their deficiencies, and where are those men going? It seems to me that it is up to the profession of the country, and particularly to the medical schools and universities of this country, to organize to meet this demand and to do it quickly.

DR. H. W. BRIGG, Wilmington, Del.: Dr. Strickler says it would be well to have a survey of the methods employed by the different state boards in licensing candidates after examination. This is an excellent suggestion because it would enable us to compare notes. That is the way progress has been made by the Council on Medical Education. If such a survey is to be made and brought to one of these meetings, we can derive benefit from it by analysis and comparison. His second recommendation is that we proceed with propaganda on legitimately advertising the better things of the medical profession; in other words, a propaganda of publicity.

DR. GEORGE M. KOBER, Washington, D. C.: It has occurred to me that new channels might be opened for graduate instruction in connection with the Public Health Service. This service is now preparing a large number of hospitals in different medical and industrial centers which need unquestionably to be properly supplied with an able consulting staff, and it is really the policy of that service to call to its aid the various medical and special surgical authorities as a consulting staff for these hospitals. In addition to the work in the hands of the Public Health Service, there is also a great work being done by the government of the United States in the operation of the workmen's compensation acts, which means the proper and adequate care for the sick and for the relief and recovery of men who have incurred accidents or diseases in the line of their duty when employed by the United States government.

DR. JOHN M. DODSON, Chicago: The proper line of action is to make use of our proper resources for graduate instruction for these various groups. The most interesting experiment along this line which has ever been instituted in this country is in connection with the Mayo Clinic and the University of Minnesota. It is unfortunate that we do not have more clinics of the sort that can supply their own funds and then give to the universities ample promise of support, in Boston, Philadelphia, New York, etc. I think it should be the existing medical schools, strongly established, seeking to utilize the larger resources of the hospitals in those cities. Many of the outlying hospitals in smaller cities are available for this purpose. I should like to see a continuation of the work in these numerous hospitals, now very well organized under the auspices of or with the advice and help of existing university medical schools.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

February, 1920, **3**, No. 2

Methodical Examination of Pupils. M. Landolt, Paris.—p. 81.
Hypotony After Trephining. A. Knapp, New York.—p. 87.
Ocular Manifestations in Cerebellar Syphilis. W. G. Dickinson, Syracuse, N. Y.—p. 89.
Experimental Production of Iritis and Its Treatment with Foreign Protein. P. L. Veach, Minneapolis.—p. 93.
Atypical Coloboma of Iris and Choroid. S. R. Gifford, Omaha.—p. 97.
Multiple Vaccination of Eyelids. A. J. Bedell, Albany.—p. 103.
Proliferating Endophlebitis and Retinal Hemorrhage. Microscopic Examination of Excised Globe. B. S. Guyton, University, Miss. —p. 111.
Unusually Large Primary Epithelioma of Ocular Conjunctiva. C. A. Veasey, Spokane.—p. 113.
Possibilities of Muscle Operations. R. O'Connor, Oakland, Calif. —p. 116.
Removal of Foreign Bodies from Eye. F. Allport, Chicago.—p. 118.
Ophthalmic Education and Text Books. C. Loeb, Chicago.—p. 121.
Keratoconus Consecutive to Vernal Conjunctivitis. J. de J. Gonzalez Leon, Guanajuato, Mexico.—p. 127.
Five Ciliæ in the Anterior Chamber. A. E. Bulson, Jr., Fort Wayne, Ind.—p. 128.
Unilateral Progressive Myopia. A. O. Pfingst, Lousville.—p. 129.

American Journal of Physiology, Baltimore

February, 1920, **51**, No. 1

*Studies on Cerebrospinal Fluid. F. C. Becht, Chicago.—p. 1.
*Id. F. C. Becht and P. M. Matill, Chicago.—p. 126.

Studies on Cerebrospinal Fluid.—Becht reports his results of a critical study of the methods employed in the observations on the cerebrospinal fluid, detailing the status of the formation and movements of cerebrospinal fluid: the mechanical factors influencing the cerebrospinal fluid; the normal rate of the formation of the cerebrospinal fluid and its absorption, and the effect of drugs on arterial, venous and fluid pressures.

Becht and Matill report the results of experiments undertaken to determine what effect the injection of tissue extracts has on the cerebrospinal fluid and, particularly, whether or not they possess a specific stimulating action, producing an actual increase in the amount of fluid produced. They found that nearly all tissue extracts have a depressor effect on the vascular system; extracts of suprarenal and of the posterior lobe of the hypophysis have a pressor effect.

Archives of Neurology and Psychiatry, Chicago

March, 1920, **3**, No. 3

*Morbi Neurales: An Attempt to Apply a Key Principle to Differentiation of Major Groups. E. E. Southard and H. C. Solomon, Boston. —p. 219.
Functions of Cerebrospinal Fluid; Spinal Drainage and Intraspinal Injections of Arsphenamized Serum. F. X. Dercum, Philadelphia. —p. 230.
*Case of Myxedematous Psychosis. S. Uyematsu, Hathorne, Mass. —p. 252.
Sensory Changes in Injuries of Musculospiral Nerve. A. S. Hamilton, Minneapolis.—p. 277.

Morbi Neurales: Key Principle to Differentiation of Major Groups.—A scheme of classification of nervous diseases is offered by Southard and Solomon. Five main groups are subdivided, and each subdivision is further divided. The main groups are: (1) infections; (2) historrhexes, focal destruction (noninfectious); (3) neuronatrophies, scleroses ("classical degenerations"); (4) imbalance exogenous (neurogenous); (5) miscellaneous, the algias, migraine, vertigo, tics, spasms, hydrocephalus, etc.

Case of Myxedematous Psychosis.—Uyematsu presents a case of typical myxedematous psychosis which showed, together with known symptoms, marked disturbance of coordination, vertigo and somnolence. The thyroid gland was found extremely atrophic with the gland tissue replaced by connective tissue fibers and with no isthmus. The remaining gland tissue was infiltrated by lympathic cells. The author suspects some etiologic relationship between the congential factor and this disease. The pituitary body was smaller than

normal, though microscopically there was no evidence of atrophy. The right ovary was removed ten years ago, the left remained atrophic, showing an evidence of chronic inflammatory process. Uyematsu suspects, having seen a similar condition of ovaries in a former case of the Danvers (Mass.) State Hospital series, some etiologic factors in certain diseased conditions of the ovaries. The pathologic changes in the brain and the cerebellum consist of arteriosclerotic alterations, general senile changes and cell changes associated with the edematous condition. The author attributes the arteriosclerotic alterations and the general senile changes to the effect of the myxedematous disease. The cell change associated with the edematous condition is considered as pathognomonic. Uyematsu believes also that there is a possible correlation between the marked atrophy of the cerebellum and the clinical symptoms of disturbed coordination and of vertigo.

Florida Medical Association Journal, Jacksonville

February, 1920, 6, No. 8

Influenza and Its Relation to Pregnancy. R. R. Kime, Lakeland.—p. 150.
Extraction of Ureteral Stones by Non-Cutting Methods. E. P. Merritt, Atlanta.—p. 153.
Physician and the Harrison Law. E. B. Bowen.

Journal of Experimental Medicine, Baltimore

Feb. 1, 1920, 31, No. 2

Mycosis of Bovine Fetal Membranes Due to Mold of Genus Mucor. T. Smith, Princeton, N. J.—p. 113.
*Experiments on Nasal Route of Infection in Poliomyelitis. S. Flexner and H. L. Amoss, New York.—p. 123.
*Etiology of Yellow Fever. X. Comparative Immunologic Studies on Leptospira Icteroides and Leptospira Icterohaemorrhagiae. H. Noguchi, New York.—p. 135.
*Id. XI. Serum Treatment of Animals Infected with Leptospira Icteroides. H. Noguchi, New York.
*Sterilization of Lipovaccines. P. A. Lewis and F. W. Dodge, Philadelphia.—p. 169.
*Coagulation in Embryonic Blood. V. E. Emmel, S. A. Levinson and M. E. Fisch, Chicago.—p. 177.
Crescentic Bodies in Aestivo-Autumnal Malaria; Their Migration and Attachment to Surface of Red Corpuscle. M. R. Lawson, New London, Conn.—p. 201.
The Hemic Basophil. G. S. Graham, Albany.—p. 209.

Nasal Route of Infection in Poliomyelitis.—The experiments described by Flexner and Amoss relate to the conditions underlying the states of susceptibility and refractoriness to infection with the virus of poliomyelitis applied to the nasal mucosa. The authors found that an effective nasal mucous membrane prevents the passage of the energetically applied virus to the brain and spinal cord. The protective power possessed by the nasal mucosa is not in itself adequate to prevent infection with the virus placed on it, since slight injury to such independent structures as the meningeal-choroid complex favors the passage of the virus from the nose to the central nervous organs. The normal nasal mucosa is, therefore, an invaluable defense against infection with the virus of poliomyelitis; and the number of healthy and chronic carriers of the virus is probably determined and kept down through the protective activities of this membrane. Antiseptic chemicals applied to the nasal mucosa on which the virus has been deposited exhibit no great protective action and are of doubtful value. Indeed, it is not impossible that to the extent to which they may affect unfavorably the destructive properties of the nasal mucosa, they may be even objectionable. Infection with the virus of poliomyelitis applied to the nasal mucosa under conditions favorable to the extension to the central nervous organs and multiplication there may be blocked or prevented by the injection of poliomyelitic immune serum into the blood. While the exact manner and site of attack of the immune serum on the virus is somewhat conjectural, when all the available data are considered, it seems probable to Flexner and Amoss that the meeting place of the virus and immune serum is in the subarachnoid space.

Immunologic Studies on Yellow Fever.—It is stated by Noguchi that monovalent immune serums prepared by several successive injections in an animal naturally refractory to *Leptospira icteroides* possess the power to agglutinate in vitro not only the homologous strains, but also all other strains of icteroides tested. On the other hand, a slight effect, or none at all, has been observed when these immune serums have been mixed in vitro with various strains of *Leptospira icterohaemorrhagiae*. A similar relation exists between the monovalent anti-icterohemorrhagic serums and the various strains of *Leptospira icteroides;* that is, there is a slight agglutinating effect in some instances on the icteroides strains, but it is never so strong as that occurring in tests against the icterohemorrhagic strains. The Pfeiffer reaction gave a sharper differentiation between the two groups, for in most instances the phenomenon was specific for the group. There were occasional doubtful reactions, but not enough to warrant a confusion of the two groups. Noguchi is of the opinion that there is not much doubt that an icteroides attack brings about, in some instances at least, a certain degree of resistance to the icterohemorrhagic infection. Hence, the study of the phenomena of active immunity strongly indicates that *L. icteroides* is closely related immunologically to *L. icterohaemorrhagiae*.

Serum Therapy in Yellow Fever.—The use of a polyvalent immune serum of high potency in the treatment of an experimental infection of guinea-pigs with *Leptospira icteroides* Noguchi found to be of definite advantage in checking the progress of the infection. When administered during the period of incubation, the serum was found capable of completely preventing the development of the disease, although on subsequent examination hemorrhagic lesions of greater or less number and extent were found in the lungs of the guinea-pigs which survived. Moreover, the serum modified the course of the disease, and when used in the early stages of infection prevented a fatal outcome. Employed at a later stage, however, when jaundice and nephritis had been present for several days and the animal was near collapse, the serum had no perceptible beneficial effect.

Lipovaccines.—Pneumococcus lipovaccine, according to Lewis and Dodge, confers a definite protection against pneumococcus infection in mice. The protective quality is not destroyed, and apparently is not greatly diminished, by heating to 130 C. for three hours or 120 C. for twelve hours. Typhoid lipovaccine gives rise to the formation of agglutinins in rabbits but to a lesser degree than saline suspensions. The antigenic qualities of the typhoid lipovaccine are greatly injured by heating to 130 C. for three hours.

Influence of Blood Platelets on Coagulation of Blood.—The fact that the average coagulation time of the blood (about twenty-tree minutes) of pig embryos represents a coagulation time six to eight times greater than that obtained for the adult, suggested to Emmel and his associates that the number of blood platelets might be responsible. They found that numerically the blood platelets varied from 415,000 to 800,000 per cubic millimeter, a content not differing in any significant degree from that of the adult. The addition of platelet material obtained from adult pig blood reduced the coagulation time for embryonic blood to an average of 8.4 minutes, a decrease of 75 per cent. The addition of 2 drops of 0.5 per cent. calcium chlorid solution reduced the coagulation time for embryonic blood to an average of 10.3 minutes, a reduction of more than 50 per cent. The addition of tissue extract to embryonic blood reduced the coagulation time to an average of 3.7 minutes, a time essentially equivalent to that obtained for adult blood. The clot was of a much firmer character than that obtained either in the normal coagulation or in the calcium experiments. Chemical analysis demonstrated a calcium content in embryonic blood in excess of that of the adult, in the proportion of 7 : 5. On the whole, the results of this study suggest that the normal coagulation of embryonic blood, as far as bile is concerned, involves a process comparable with that obtained after the addition of tissue extract or kephalin, but on a small scale. In the embryonic blood in vitro, through the gradual disintegration of cellular elements, a certain amount of tissue substance (kephalin [?]) is slowly set free in the plasma, neutralizing the bile and ultimately liberating a sufficient amount of calcium to bring about coagulation.

Hemic Basophil.—Graham suggests that the basophil is a degenerated or degenerating cell. It is probably derived from the eosinophilic cells and, perhaps, in rare cases from those of neutrophilic type.

Journal of Laboratory and Clinical Medicine, St. Louis

February, 1920, **5**, No. 5

*Bacteriology and Pathology in Six Cases of Lethargic Encephalitis. P. F. Morse and E. S. Crump, Detroit.—p. 275.
*Protein Fever: Effect of Egg White Injection on Dog. S. J. Cohen, Chicago, Ill.—p. 285.
*Leukocytes in Anaphylaxis of Serum Sickness. J. H. Barach, Pittsburgh.—p. 295.
*Studies in Metabolic Changes in Experimental Tetany. D. T. Togawa, Tokyo, Japan.—p. 299.
*Bacillus Bronchisepticus as Cause of Infectious Respiratory Disease of White Rat. H. P. Hoskins and A. L. Stout, Detroit.—p. 307.
Bacteriology and Control of Contagious Nasal Catarrh (Snuffles) of Rabbits. N. S. Ferry and H. P. Hoskins, Detroit.—p. 311.
Toxicity of Lung Extracts. P. Morse, Detroit.—p. 319.
*Simplified Method for Detection and Estimation of Distribution of Morphin. A. Morgulis and V. E. Levine, Omaha.—p. 321.

Bacteriology and Pathology of Lethargic Encephalitis.—Cultures made by Morse and Crump from fluid aspirated from the lateral ventricles of the brain in six cases resulted in securing uniformly pure cultures of a nonmotile coccus, small in young cultures, as large as a staphylococcus in old cultures, with a tendency to grow in diplococcus and tetrad forms and to bunch in small clusters. It divides similarly to a staphylococcus in three planes, stains readily with the aniline dyes, and is gram-positive. The pathologic findings seem to indicate that "encephalitis lethargica" is not a true encephalitis in the sense that general paresis or the cerebral form of poliomyelitis are examples of encephalitis, because ganglion and pyramidal cell destruction does not characterize lethargic cases. But it is a typical example of low grade "meningomyelitis," the chracteristic lesions being in the meninges and white matter of the basal ganglia, pons and upper cord. Marie, in 1890, described cases similar to "encephalitis lethargica" and called them "acute multiple sclerosis." From a pathologic, as well as clinical, point of view, Morse and Cramp feel that this term has much to justify its use.

Effect of Egg White Injection.—Repeated subcutaneous injections of egg white in guinea-pigs produce a constant fever, associated with most of the signs of infection, whereas the same procedure in dogs does not affect the temperature curve and does not produce fever. Cohen is unable to explain the difference of the reactions.

Leukocytes in Anaphylaxis of Serum Sickness.—In a case of serum sickness with a delayed anaphylactic reaction recorded by Barach, the blood showed at the time of the anaphylactic reaction, a primary polynuclear leukocytosis followed by the appearance of myelocytes after the organism had appropriated the available leukocytes of the circulating blood, and at the same time an increased number of blood platelets. A leukopenia followed; at which time the polymorphonuclear counts were low and the mononuclears relatively high. The eosinophilia, which has been said to accompany anaphylactic reactions in general, was absent throughout. Therefore, Barach concludes that eosinophilia is not the criterion of an anaphylactic reaction.

Metabolic Changes in Experimental Tetany.—In parathyroidectomized dogs, showing typical tetanic symptoms, an acidosis condition was always observed by Togawa, and the antitryptic power and the nonprotein nitrogen content of the blood serum were usually increased. In thyroidectomized dogs, showing no tetanic symptoms, however, an acidosis condition was never observed. On the contrary, a slight alkalosis condition was sometimes induced. The antitryptic power and the nonprotein nitrogen content of the blood serum remained almost unchanged.

Bacillus Bronchisepticus as Cause of Infectious Respiratory Disease.—Bacillus bronchisepticus was isolated by Hoskins and Stout from the nostrils, nasal sinuses, trachea, lungs and heart blood of white rats affected with a serious disease of a distemper-like character. The organism was recovered in pure culture in about one half the cases. Other organisms were found in the nostrils and nasal sinuses, and once in the trachea. Agglutination tests pointed to the identity of the rat organism and *B. bronchisepticus* from a canine source. The serum of rats affected with the disease agglutinated both homologous as well as heterologous strains of *B. bronchisepticus* in comparatively high dilutions. One rat serum showed strong agglutination at a dilution of 1:1,024.

Simplified Method for Detection and Estimation of Distribution of Morphin.—The presence of morphin in food, or in tissues and body fluids has been determined by Morgulis and Levine by heating with 2 per cent. tartaric acid (if solid, the material should first be ground or finely minced) to convert all morphin into the soluble tartrate. The mixture is rapidly cooled, preferably on ice, to solidify the fatty material. The solid residue is removed by straining through cheese cloth, and is washed until the washings are no longer acid to litmus. The liquid, after being filtered through paper, is evaporated to a pasty consistency. The tartrate is then decomposed by the addition of an excess of solid bicarbonate which sets the alkaloid free. The evaporation is then continued to complete dryness, and the mass is powdered and extracted with chloroform to remove the free morphin. The volume of the chloroform extract is noted, and the smallest quantity of the extract is found which on evaporation (in a porcelain crucible over the water bath) leaves a residue which yields a definite morphin test. In this way the relative amount of morphin in several extracts can be determined. Besides knowing the limit of sensitivity of the reaction an approximate estimate of the amount of morphin in the original sample is possible. Inasmuch as the authors found that morphin, whether given subcutaneously or by mouth, is widely distributed throughout the animal body, finding its way into almost every tissue, they state that it is not advisable to limit the toxicologic examination for morphin to the alimentary tract alone, an examination of at least the kidney and urine and liver being indispensable.

Modern Hospital, Chicago

February, 1920, **14**, No. 2

Home for Tuberculous on San Francisco Bay. H. H. Meyers, C. Bush and O. L. Tiedebohl.—p. 83.
Hospital and Community. C. G. Parnall, Ann Arbor.—p. 92.
Hospital and Home Isolation of Infectious Diseases: Their Relatives. D. L. Richardson, Providence.—p. 99.
Need of War Trained Physiotherapy Experts in Hospital. F. J. Cotton, Boston.—p. 101.
Making Toys for Children out of Newspapers and Paper Bags. M. H. Barker, Worcester.—p. 103.
Anesthetics—Their Use, Value and Methods of Administration. H. A. Britton, Minneapolis.—p. 106.
How to Meet Need of Rural Hospitals. J. J. Ross, Middlebury.—p. 108.
Air Control and Reduction of Death Rate after Operations. E. Huntington, New Haven.—p. 111.
Misericordia Hospital (Philadelphia) Distinguished by Beauty of Grounds, Structure and Interior. J. O'Grady, Washington, D. C.—p. 115.
Hospital Survey in Interchurch World Movement. F. Clare, New York.—p. 123.
Blind Men Taught New Occupations at Chicago Lighthouse. E. L. Swift, Chicago.—p. 126.
Group Practice Problem. O. V. Huffman, Brooklyn.—p. 127.
Better Eye, Ear, Nose and Throat Service in Hospitals. F. Allport, Chicago.—p. 129.
Health Problems Among Wealthy Rural Populations. E. E. Wick, Worthington.—p. 131.
Reconstruction of Hospitals from Nursing Standpoint. E. A. Greener, New York.—p. 134.
Detecting Hospital Food Waste. E. E. Irons, Chicago.—p. 143.
Social Service Dietetics in Relation to Jewish Problems. M. L. Schapiro, New York.—p. 147.
Statewide Cooperation in Industrial Health Education. A. M. Staebler, Boston.—p. 158.

New Orleans Medical and Surgical Journal

February, 1920, **72**, No. 8

Medical Aspect of Enteroptosis. A. E. Fossier, New Orleans.—p. 444.
Food Conditions in Europe; Etiology of Pellagra. S. Harris, Birmingham.—p. 452.
Results of Unerupted and Impacted Teeth in Adult in Reference to Neuralgia and Other Lesions. A. G. Fredrichs, New Orleans.—p. 467.
Eye Examination as Factor in Diagnosis of Transmitted Heredity Syphilis. T. J. Dimitry, New Orleans.—p. 474.
Syphilitic Fibrosis of Penis (Keloid Type) in Negro; Report of Case. H. W. E. Walther, New Orleans.—p. 481.

Prophylaxis, Pathology, Tongue Cleansing, Tongue Indications. J. J. Sarrazin.—p. 483.
Persistent Occipito-Posterior Positions. H. E. Miller, New Orleans. —p. 494.
Considerations Suggested by Publications of Dr. Noguchi on Experimental Yellow Fever. M. E. Lebredo, Havana, Cuba.—p. 499.

New York Medical Journal

Feb. 14, 1920, **111**, No. 7

Fluctuations of Thyrosuprarenal Activity in General Diseases. C. E. de M. Sajous, Philadelphia.—p. 265.
Pineal Body: Structure, Function and Diseases. S. E. Jelliffe, New York.—p. 269.
Endocrine Tropisms; Thyrotropisms. D. M. Kaplan, New York.—p. 275.
Thyroidal Constipation. S. G. Strauss, New York.—p. 280.
Hyperthyreoidism. A. B. Webster, Philadelphia.—p. 283.
Treatment of Goiter. H. L. Foss, Danville, Pa.—p. 285.
Endocrinologist and Internist. W. W. Herrick, New York.—p. 286.
Toxic Goiter. J. C. O'Day, Honolulu.—p. 287.
Treatment of Early Hyperthyroidism. F. L. Meredith, New York. —p. 289.

New York State Journal of Medicine

February, 1920, **20**, No. 2

Blood Clot Dressing in Mastoidectomy: Modified Technic Which Insures Primary Painless Healing Without Deformity. G. E. Davis, New York.—p. 38.
Aural Significance of Vertigo. I. W. Voorhees, New York City. —p. 42.
Neutrophilic Granules of Circulating Blood in Health and in Disease. G. S. Graham, Albany.—p. 46.

Northwest Medicine, Seattle

February, 1920, **10**, No. 2

Clinical Manifestations in Gallbladder Disease. F. Smithies, Chicago. —p. 31.
Special Requirements in Nutrition. G. E. Burget, Portland.—p. 39.
Relationship Between General Digestive Conditions and Mouth Conditions. M. M. Null, Seattle.—p. 43.
Vincent's Angina: Report of Eighty Cases. C. L. Shields, Salt Lake City.—p. 45.
Plea for Early Operative Intervention in Acute Suppurative Affections of Mastoid. O. M. Rott, Spokane.—p. 46.
Nerve Block Anesthesia in Superior Thyroid Pole Ligation. J. Hunt, Seattle.—p. 49.

Public Health Journal, Toronto

February, 1920, **11**, No. 2

Child Health. A. Brown, Toronto.—p. 49.
Some Problems of Child Hygiene. M. Sherwood, Baltimore.—p. 54.
Antenatal Work and Stillbirths. J. G. Gallie, Toronto.—p. 62.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman, Newark, N. J.—p. 88.
Raising Standards of Living as Weapon in Anti-Tuberculosis Campaign. B. B. Burritt, New York.—p. 89.

Pennsylvania Medical Journal, Athens

February, 1920, **23**, No. 5

*Intussusception: Report of Case. S. E. Tracy, Philadelphia.—p. 247.
*Epidemic Cerebrospinal Meningitis. J. Sadler, Philadelphia.—p. 250.
*Prevention of Communicable Respiratory Diseases Based on Observations in Army Camps. O. H. Petty, Philadelphia.—p. 255.
*Cardiovascular Phenomena Associated with War Neuroses. G. M. Piersol, Philadelphia.—p. 258.
*Significance of Heart Murmurs Based on Examinations in U. S. Army. E. H. Goodman, Philadelphia.—p. 263.
*Early Recognition of Diseases of Heart. T. McCrae, Philadelphia. —p. 267.
Advantages of General Over Local Anesthesia in Tonsillectomy. H. M. Becker, Sunbury.—p. 273.

Intussusception.—In the case reported by Tracy, the intussusception took place high up in the small bowel and the mass was tucked over against the lateral wall of the abdomen on the left side and gave a distinct area of dullness and resistance over the entire length of the descending colon.

Epidemic Cerebrospinal Meningitis.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1549.

Prevention of Communicable Respiratory Diseases.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 1634.

Cardiovascular Phenomena Associated with War Neuroses.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 1634.

Significance of Heart Murmurs.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 1634.

Early Recognition of Diseases of Heart.—McCrae says that there are no set rules which we can apply to the early recognition of cardiac disease in every case. The determination to observe carefully and investigate thoroughly will lessen mistakes. It is wiser to start with the idea that there is some disturbance present and prove the contrary than to make light of symptoms and fail to recognize changes which might be aided by early treatment.

Psychobiology, Baltimore

February, 1920, **2**, No. 1

Temporal Maze and Kinesthetic Sensory Processes in White Rat. W. S. Hunter, Lawrence, Kans.—p. 1.
Behavior of White Rats in Presence of Cats. C. R. Griffith, Champaign.—p. 19.
Biologic Basis of Association of Ideas and Development of Perception. K. Dunlap, Baltimore.—p. 29.
Studies of Cerebral Function in Learning. K. S. Lashley, Minneapolis.—p. 55.

South Carolina Medical Ass'n Journal, Greenville

February, 1920, **16**, No. 2

Roentgen-Ray Study of Esophageal Diverticula. R. Taft, Charleston. —p. 27.
Anaphylaxis and Anti-Anaphylaxis. C. V. Akin, Columbia.—p. 32.
Annual Report of the State Health Officer. J. A. Hayne, Columbia. —p. 50.

West Virginia Medical Journal, Huntington

February, 1920, **14**, No. 8

Joseph Price. A. P. Butt, Elkins.—p. 281.
To Hell with Sanitation Anyway. H. G. Steele, Bluefield.—p. 288.
Relations of Physician to Hospital. J. R. Hunter, Huntington.—p. 293.
Ocular Lesions Due to Focal Infections. H. H. McGuire, Winchester. —p. 295.
Principles Preliminary to Treatment of Functional Nervous Disorder. T. A. Williams, Washington, D. C.—p. 300.

Wisconsin Medical Journal, Milwaukee

February, 1920, **18**, No. 9

Infection of Kidney. H. Cabot, Boston.—p. 341.
Value of Military Surgery in Civilian Practice. G. W. Crile, Cleveland. —p. 349.
Tuberculosis with Pregnancy. C. H. Davis, Milwaukee.—p. 355.
Conservation of Vision. G. I. Hogue, Milwaukee.—p. 361.
Mouth Infection as Source of Systemic Diseases. M. N. Federspiel, Milwaukee.—p. 365.
Etiology of and Prophylactic Inoculation in Influenza. E. C. Rosenow, Rochester, Minn.—p. 370.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 14, 1920, **1**, No. 3085

Modern Treatment of Functional Nervous Disorders. B. Hart.—p. 207.
*Appendicectomy by a New Route. R. H. A. Whitelocke.—p. 211.
*Results of Protective Inoculation Against Influenza in British Army at Home, 1918-1919. W. B. Leishman.—p. 214.
Roentgen-Ray Treatment of Neoplasms. G. E. Vilvandre.—p. 215.
Chronic Infection of Faucial and Postnasal Lymphoid Tissue in Children. P. W. Leathart.—p. 217.
Ruptured Gastric Ulcer in a Man Aged 78; Laparotomy: Recovery. A. Fullerton.—p. 218.
*Method of Treating Dhobie Itch. C. J. Glasson.—p. 219.

Appendectomy by a New Route.—The operation described by Whitelocke removes the appendix through the right iliac fossa in cases in which no general exploration of the abdominal cavity is called for—that is, in acute cases rather than chronic cases. The incision is made one-half inch or less internal or medial to and parallel with the anterior superior spine of the ilium, or as near to it as practicable. The cut is carried above and below this point to an equal extent and parallel with the iliac crest and spine and the attached Poupart's ligament. The length of the incision usually need not be greater than 2½ inches. The cut at once divides the skin, subcutaneous fascia, and aponeurosis of the external oblique muscle to its full length. At this stage a white line of varying distinctness may usually (roughly in about 58 per cent. of cases noted) be seen passing across the muscle almost horizontally, in a direction from the anterior superior spine of the ilium to the middle line of the body; this line which is bloodless, indicates a natural division of the muscle into an upper and lower section. With this line as a guide

the thick fibers of the muscle are incised and separated. The subjacent transversalis muscle is then similarly treated. In uncomplicated cases, and whenever there is no evidence of suppuration, as may usually be determined by palpation of the peritoneum through the transversalis fascia, this fascia and the peritoneum are divided in a direction parallel with the skin incision, medial or internal to the reflection of the parietal peritoneum on to the iliac fossa, deep to and parallel with Poupart's ligament. Where, however, an abscess is present or suspected it is safer to turn the peritoneum inward or medialward from its seat of reflection behind Poupart's ligament and to open it posteriorly from the iliac fossa. The transversalis fascia and peritoneum may be cut transversely as with the deep muscles, if the incision is likely to require enlargement. When the abdomen is opened the viscus first seen is generally (86 per cent. of cases noted) large intestine, either the first part of the ascending colon or, less frequently, the cecum. The cecum with its appendix is delivered through the wound. The appendix is removed in the usual manner and the wound is closed in layers.

Results of Protective Inoculation Against Influenza.—The results recorded by Leishman confirm and even strengthen his original anticipations, that at least a moderate degree of protection against infection might be expected, while more decidedly beneficial effects might be hoped for in a diminution of both the frequency and the gravity of the pulmonary complications.

Method of Treating Dhobie Itch.—Glasson claims to have treated many persons with Dhobie itch with success by a combination of roentgen rays and chrysophanic acid ointment (30 grains to 1 ounce of wool fat).

Dublin Journal of Medical Science

February, 1920, **3**, No. 578

Sir Patrick Dun's Library. T. P. C. Kirkpatrick.—p. 49.
Eusol and its Intravenous Uses. A. L. Gregg.—p. 68.
*Influence of Salts and Other Substances on Agglutination. V. M. Synge.—p. 76.

Influence of Salts and Other Substances on Agglutination.—The substances experimented with by Synge were glucose (0.6 per cent. solution, and 6 per cent. solution); glycocoll (0.6 per cent. solution); alanine (0.6 per cent. solution) asparagin (0.6 per cent. solution and 6 per cent. solution). The conclusions drawn from his results are: 1. The presence of any substance in solution is not sufficient to cause agglutination. 2. Asparagin has a marked influence on agglutination. 3. Other amino-acids, e. g., alanine and glycocoll have no influence on agglutination. 4. Glucose has no influence on agglutination.

Edinburgh Medical Journal

February, 1920, **24**, No. 2

Hypertonus of Sympathetic in Relation to Intestinal Toxemia. J. J. G. Brown.—p. 71.
Binet Scale for the Blind. W. B. Drummond.—p. 91.
Introduction to Psychotherapy. G. Robertson.—p. 100.
Tuberculides and Their Relation to Tuberculosis of Skin and Other Organs. R. C. Low.—p. 114.
Metal Disc in the Esophagus, Esophagotomy; Recovery. R. C. Alexander.—p. 120.

Indian Medical Gazette, Calcutta

January, 1920, **55**, No. 1

Impassable Strictures of Urethra. J. Roberts.—p. 1.
Epidemic of Fifty-Four Cases of Relapsing Fever in Birjand, East Persia. A. S. Fry.—p. 2.
Alimentary Rest Treatment of Diabetes. E. E. Waters.—p. 8
Quinin Prophylaxis and Treatment of Malaria in Coolie Population of Assam. C. E. P. Forsyth.—p. 12.
*Cinchonidin in Malaria. D. S. Ollenbach.—p. 14.
Influenza. B. Singh.—p. 15.

Cinchonidin in Malaria. — Twenty-four patients were injected deep in the deltoid with cinchonin bihydrochlorid. The first dose for adults was 7 minims and subsequent ones 10 minims or about 3 and 5 grains, respectively. From two to four injections were given on successive days where possible, or about 8 to 18 grains. All the cases were genuine malaria. No local or constitutional disturbance of any kind took place, except that a man who was given six injections had rather a painful arm, and another was cinchonized the very evening he was first injected; but both symptoms passed away quickly. Quinin and arsenic were given in two obstinate cases as after-treatment. There were two relapses, showing 91.7 per cent. recoveries out of twenty-four cases.

Journal of Laryngology, Rhinology and Otology, London

February, 1920, **35**, No. 2

*Otomycosis. A. Cheatle.—p. 33.
*Carcinoma of Postericoid Region (Pars Laryngea Pharyngis) and Upper End of Esophagus. A. L. Turner.—p. 34.
Sellar Decompression for Pituitary Tumors. W. Howarth.—p. 49.
Brain from a Patient Who Presented Nystagmoid Movements in Pharynx and Larynx. A. B. Kelly.—p. 53.
Simple Method of Recording Diagrammatically Movements of Vocal Cords, with Special Reference to Tremors. (Epidiascope Demonstration.) A. B. Kelly.—p. 54.
Epithelioma of Larynx Removed by "Window" Resection of Thyroid Cartilage. H. L. Lack.—p. 54.

Otomycosis.—Cheatle has seen seven cases of otomycosis in nine months. In all of these one ear only was affected, and the trouble involved the deep meatus. They were easily diagnosed, presenting textbook symptoms and signs, and were quickly cured by textbook treatment. The clinical diagnosis was verified by microscopic examination.

Carcinoma of Postericoid Region and Upper End of Esophagus.—Turner reviews the history of 140 cases; in ninety-eight of these the tumor was situated in the postcricoid region. Most of these patients (86 per cent.) were females.

Lancet, London

Feb. 14, 1920, **1**, No. 5033

*Blood Vessels and Pressure. L. Hill.—p. 359.
Results of Protective Inoculation against Influenza in the Army at Home, 1918-1919. W. B. Leishman.—p. 366.
*Complement Fixation Experiments in Influenza. H. J. B. Fry and C. Lundie.—p. 368.
Periodicity of Influenza. C. O. Stallybrass.—p. 372.
*Efficient and Economical Pylon. W. M. Johnston.—p. 373.
Three Cases of Acute Pancreatitis. G. P. Mills.—p. 376.
Traumatic Rupture of Intestine Without External Injury. G. M. A. Herzfeld.—p. 377.
*Intravenous Administration of Mercuric Iodid in Treatment of Syphilis. R. L. Spittel.—p. 378.

Blood Vessels and Pressure.—Not increased capillary pressure and filtration are in Hill's opinion the cause of edema, but stagnation of flow with consequent oxygen want and increased imbibition.

Complement Fixation Experiments in Influenza.—An antigen prepared by Fry and Lundie from an organism isolated in the third wave of an epidemic showed fixation of complement with serums derived from cases of influenza, both recent and those occurring in previous waves of the epidemic. This complement fixation is absent in the case of serums from normal individuals who have never had influenza. It is absent in the case of serums from individuals who are suffering from other specific diseases and are free from any recent history of influenza. An antigen prepared from another organism showed no fixation of complement with serums from cases of influenza.

Efficient and Economical Pylon.—The important features of this pylon are: (1) a bucket molded to fit the stump, and supported by a fiber cone with a satisfactory rim at the top; (2) simplicity of design; (3) light weight and low cost of production.

Intravenous Administration of Mercuric Iodid in Treatment of Syphilis.—An experience of over 4,000 of these injections, during a period of four years, convinces Spittel that this procedure is a valuable adjunct to the treatment of syphilis with arsphenamin; the combination establishing a cure (as gaged by Wassermann tests, provocative and otherwise, at varying intervals) more quickly and permanently than by any other method. The solution has the following composition: mercuric iodid, 50 grains; sodium (or potassium) iodid, 8 drams; phenolphthalein (0.5 per cent. solution), 20 minims; sodium hydrate (25 per cent. solution), about 2 drams; distilled water, to 40 ounces. The dose for an adult is from 8 to 12 c.c. given intravenously. The injection is tolerated well. The results are not only far quicker than those obtained with mercury and iodids given by any

other methods, but often even a single injection produces an effect almost as phenomenal as arsphenamin. In nerve syphilis, especially, some of the finest results are obtained. The number of injections and the interval between them vary with the particular case. An ordinary case of secondary syphilis may be treated with five or six injections each of arsphenamin and mercuric iodid, given at intervals of from seven to ten days alternately, in varying sequence or in successive courses. Often after such a series a negative Wassermann reaction is permanently obtained; if not, further courses are given to meet particular needs.

Practitioner, London

February, 1920, 104, No. 2

*Phantom Limbs of Amputés. E. M. Corner.—p. 81.
Painless Operations. P. L. Mummery.—p. 89.
Medicolegal Notes. J. Colli. Cont'd.—p. 98.
Heart in Acute Febrile Diseases. H. L. Cronk.—p. 102.
*Estimation of Sugar in Blood in Diagnosis and Treatment of Diabetes. P. J. Cammidge.—p. 114.
Syphilis of Throat, Nose, Ear; Diagnosis and Treatment. D. Guthrie.—p. 131.
*Pernicious Anemia at an Advanced Age. G. Ward.—p. 145.
Ionization. M. Wardle.—p. 149.
Ruptured Popliteal Aneurysm. C. P. Lankester.—p. 151.
*Cerebrospinal Fever Relapse. P. N. Randall.—p. 152.

Phantom Limbs of Amputés.—More than 500 cases were investigated by Corner. His enquiries established these facts: 1. Phantoms made their appearance immediately after operation. 2. They were very unusual in the young, but were more frequent among the older patients. They were of much greater frequency and severity in military than in civil practice. 3. As a rule, they obtruded themselves less in frequency and sensation as time went on, and within eight months or a year the patient slept well, did not dream, and was only conscious of the phantom limb when he thought of it. It was a sign of considerable clinical importance if the patient was undisturbed by his missing limb in sleep and unaffected in dreams. The presence of or variations in the phantoms are often of considerable clinical value, particularly in conjunction with other physical signs, in distinguishing whether the symptoms in a particular patient are physical or psychic, bodily or mental, peripheral or central.

Estimation of Sugar in Blood in Diagnosis and Treatment.—A study of more than 700 cases of diabetes by Cammidge has shown that there is no constant blood sugar level for the appearance of sugar in the urine in quantities recognizable by ordinary tests; also, that there is no definite relationship between the percentage of sugar in the blood and either the percentage or total amount of sugar excreted by the kidneys. Patients with a permanently high blood sugar may pass comparatively little sugar in their urine, while, in some instances, a normal, or even a subnormal, blood sugar curve may be associated with frank glycosuria. In either condition, examination of the urine alone does not give a correct picture of the case, and, if it is not checked by blood sugar estimations under controlled conditions, may readily lead to mistakes in diagnosis and treatment. As a rule, young diabetics have a lower threshold point for clinical glycosuria than those of middle age, and the threshold rises with advancing years. It is, therefore, important that the presence of even small amounts of sugar in the urine of persons of middle age should not be dismissed as of little significance, unless a series of blood tests have shown that their tolerance for carbohydrates is not seriously defective. Hyperglycemia may exist without clinical glycosuria, that is with an insufficient percentage of sugar in the urine to give the ordinary tests for sugar. The reverse condition, glycosuria with a normal or subnormal percentage of sugar in the blood, is not as uncommon as is generally supposed. Cammidge's observations suggest that many cases of latent diabetes are essentially hepatic in origin, and that so long as the patient avoids sugar and foods containing sugar as such, he may take any starchy food in moderation without harm, provided that the protein and fat content of the diet are also controlled. He warns that too hasty a diagnosis of diabetes should not be made from the presence of an excess of sugar in the blood nor even from an abnormal blood sugar curve after a test meal of sugar, for other diseases may be associated with hyperlycemia. In the later stages of nephritis, for example, the percentage of sugar in the blood is usually high, often equalling the amount met with in severe diabetes when uremia is imminent, but the blood picture is one of complete metabolic failure, and the end products of nitrogen metabolism are correspondingly increased. Some excess of sugar in the blood is usually found in patients suffering from cariovascular diseases with high blood-pressure, even when there is little or no indication of renal disturbance. Carcinoma is another condition in which it is said that there is often moderate hyperglycemia.

Pernicious Anemia at an Advanced Age.—Ward's patient was 85 years of age. Her family history was wholly negative, and she had always enjoyed good health until she reached the age of 82, when she first noticed a progressively increasing weakness, nausea and flatulence. When Ward first saw her, which was six months before her death, she presented characteristic symptoms which permitted a very confident diagnosis of pernicious anemia before the blood was examined. She also had certain gastro-intestinal symptoms with glossitis, and numbness of the extremities. The patient's chief complaints were of sore tongue and pain in the abdomen. Ward states that chronic or acute glossitis with anemia is practically always pernicious anemia.

Relapse in Cerebrospinal Fever.—Randall reports a case in a man, aged 33, in which a true relapse occurred, ten weeks after recovery from the original attack.

South African Medical Record, Cape Town

Jan. 24, 1920, 18, No. 2

Tympanic Membrane: Its Correct Form and Reflecting Areas. J. L. Aymard.—p. 21.
*Cirrhosis of Liver; Suggestion as to Treatment. F. P. Fouche.—p. 24.

Treatment of Cirrhosis of Liver.—Fouche suggests that in his case the subcutaneous injection of ascitic fluid, withdrawn from the patient, prolonged life.

Archives des Mal. du Cœur, etc., Paris

October, 1919, 12, No. 10

*Analysis of the Normal Venous Curve. W. Janowski.—p. 433.
*Dissociation of Pulse in Aortic Stenosis. L. Gallavardin and L. Tixier.—p. 447.
The Circulation with Acroparesthesia from Chilling. J. Cottet.—p. 457.

The Venous Pulse.—Janowski discusses the rational interpretation and nomenclature of the elements of the normal venous pulse tracing, according to the prevailing ideas as to their origin.

Dissociation of Pulse Findings.—The oscillometer and the auscultation findings did not parallel each other in the case reported by Gallavardin and Tixier in which aortic stenosis and aortic insufficiency were accompanied with pulsus tardus and anacrotism.

Archives de Médecine des Enfants, Paris

February, 1920, 22, No. 2

*The Arterial Circulation in Infants. E. Lesné and L. Binet.—p. 69.
*Inherited Syphilis and Dystrophies. V. Hutinel and H. Stévenin.—p. 77. Cont'n.
Senile Skin in Children. Variot and Caillau.—p. 106.
Management of Acute Appendicitis. J. Comby.—p. 112.

Arterial Circulation in Infants.—Lesné and Binet found that the differential pressure increases with the infant's age, as also the arterial pressure in general. Feeding and crying raise the maximal pressure but sleep reduces it, as also gastro-intestinal derangement. The arterial circulation did not seem to be modified with mild infections and pleurisy. After feeding, the pulse dropped from 120 to 96. The pulse varied widely, but was over 100 in infants less than 4 months old; all after this age averaged 95. Testing the excitability of the vagus by the oculocardiac reflex induced more vigorous responses than in adults. Even in infants only 2 weeks old, the heart beat dropped from 120 or 130 to 90 when the pressure was applied to both eyeballs, but it ran up again at once. Inhalation of amyl nitrite caused pronounced vasodilation in infants 3 months old but not in infants less than a month old. This test is not borne well by infants.

Inherited Syphilis and Dystrophies.—In this second instalment, Hutinel and Stévenin discuss the direct, partial, and the indirect, generalized, dystrophies for which syphilis is responsible, and also the hereditary dystrophies, with examples of each. In some of the children the head is large, the veins in the scalp and chest are prominent, and there is occasional headache or there are signs of colitis, or the hands and feet show a tendency to cyanosis—all with positive Wassermann reaction. Under specific treatment the children began to thrive at once. The writers comment on the sclerosis and sensitization, and on the arousing of lesions from inherited syphilis by some accidental infection or intoxication, especially during epidemics of scarlet fever, diphtheria or typhoid. Grave symptoms are often noted from the liver, brain, pancreas or suprarenals which would be ascribed to the acute infectious disease if the positive Wassermann reaction did not suggest that syphilis had provided a point of lesser resistance. They have seen typhoid fever induce the flaring up of an old syphilis that had long been apparently extinct, and lead to a fatal termination. On the other hand, the syphilis may imprint an especially severe character on an acute disease, enhance its severity, prolong it and entail complications. When tuberculosis develops in a syphilitic, or the tuberculous acquire syphilis, the tuberculous lesions often tend to sclerosis, and may be favorably influenced by specific treatment and hygiene. Or the tuberculosis may pass into a torpid stage, with amyloid degeneration, the tuberculous lesions affecting preferentially the organs already impaired by the inherited syphilis.

Bulletin de l'Académie de Médecine, Paris

Jan. 27, 1920, **83**, No. 4

*Lethargic Encephalitis. F. Widal.—p. 81.
*Hypernephroma in the Uterus. H. Hartmann.—p. 90.
*Electric Treatment of Tuberculous Osteitis. E. Doumer.—p. 93.
Undernutrition as Factor in Deficiency Disease Phenomena in Pigeons. A. Lumière.—p. 96.

Lethargic Encephalitis.—Widal observes that the virus causing this disease seems to affect scattered small patches of the nervous system, skipping the intervening areas. This imprints a peculiar physiognomy on the malady. In one case, typical ankle-clonus and the toe phenomenon were the only signs beyond the fever, somnolency and ptosis, with none of the other disturbances which usually accompany ankle-clonus.

Hypernephroma in the Uterus.—Hartmann does not know of any case on record like the one he reports in which a large tumor, evidently of aberrant suprarenal tissue, had developed in the uterus. The term corticosuprarenaloma seems preferable, he says, as tumors of this kind develop exclusively from aberrant suprarenal cortex cells. He knows of ten or twelve cases of such aberrant suprarenal cell tumors in the broad ligament and ovary. In the uterus case related, there were several local recurrences, but the suprarenals proper have shown no signs of disease during the three years to date.

Electric Treatment of Tuberculous Osteitis.—Doumer now announces that the cases he published eight years ago as cured by application of the high frequency current have had no recurrence since. The permanent efficacy of this treatment for tuberculous osteitis is thus established. In four of his later series of twenty cases the lesion was in the foot and of long standing. In the only two cases in which the treatment failed, the lesion was on the hand, and there was one recurrence in another case requiring repetition of the treatment. The sitting was for ten minutes daily or three times a week, the current 80,000 volts interrupted up to 800,000 or 1,000,000 times a second.

Bulletin Médical, Paris

Jan. 31, 1920, **34**, No. 6

*Acute Purulent Pleurisy. C. Villandre.—p. 87.
*Chronic Empyema. A. Cauchoixy.—p. 91.
Suppuration in Traumatic Hemothorax. P. Ameuille.—p. 94.
Roentgen Ray Findings with Purulent Pleurisy. P. Cottenot.—p. 98.

Acute Purulent Pleurisy.—Villandre opens this pleurisy number of the *Bulletin* by describing the preferable technic for pleurotomy as the proper treatment for purulent pleurisy. The condition of the lung and the general condition must be such as not to contraindicate the intervention, knowing the exact site of the abscess and draining at the lowest point. Another indispensable precaution is the determination of the micro-organisms involved: The tubercle bacillus contraindicates pleurotomy, while the streptococcus, associations of germs, and putrid pleurisy demand immediate pleurotomy. Pure pneumococcus pleurisy does not always require pleurotomy, he adds. Local anesthesia is all that is needed, except for restless young children. Rib resection must accompany the pleurotomy to allow removal of the false membranes with pneumococcus or streptococcus pleurisy. Provision for drainage should be ample, but managed so as not to promote the collapse of the lung. Antiseptic lavage or intermittent flushing of the cavity is necessary with the streptococcus or associated microbes or the germs of putrid or gangrenous pleurisy. As soon as the temperature is normal, breathing exercises should be begun and kept up and the spirometer used to combat the tendency of the lung to retract.

Chronic Empyema.—Cauchoix discusses the reasons why empyema has so often resisted all treatment. Defective drainage or a persisting foreign body is usually to blame, a scrap of drain or of gauze or a chip from an instrument or piece of suture material—all of these have been found in empyemas. Osteitis of a rib close to the fistula may be a factor, and raying may reveal a second pus pocket. An instructive case is related by Picquet in which an empyema that had lasted for six years healed up at once when a secondary pus pocket in the lumbar region was incised and a long drain passed through this incision and up through the diaphragm into the pleura. The various methods for repair when suppuration has been arrested are compared. The prognosis is much better since Carrel-Dakin irrigation or insufflation of oxygen has been applied to these old cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 5, 1919, **43**, No. 35

*Pathologic Arterial Tension. M. Villaret and L. Dufour.—p. 1018.
Epidemic of Paratyphoid from Laundering without Boiling. A. Louste and H. Godlewski.—p. 1021.
*Dysentery Spread by Baker. A. Louste. and H. Godlewski.—p. 1022.
*Meningitis in Gonorrhea. Boivin.—p. 1024.
Tardy Sequelae of Chest Wounds. E. Sergent and P. Pruvost.—p. 1029.
Remote Results of Chest Wounds. Tuffier.—p. 1047.

The Arterial Tension in Disease.—Villaret and Dufour report the application in various pathologic conditions of their method of studying the pulse by simultaneous oscillometry, palpation and auscultation. This provides a constant, the variations in which are characteristic and instructive.

Bacillary Dysentery Spread by Baker.—In the village of 600 souls there had been thirty-one cases of bacillary dysentery with six deaths in less than a month. The district health officer had visited the village and given the usual advice to disinfect the water, etc., and then left, but the military inspector investigated conditions more closely and found that all in the family of the village baker had had the disease among the very first. After the baker had been instructed and elementary hygienic measures enforced in his business, the epidemic was at once arrested.

Meningitis in Gonorrhea.—In the case reported by Boivin, violent headache and fever developed three or four weeks after the onset of gonorrhea. The urethral symptoms had been mild, but signs of inflammatory processes in the testicles, meninges and joints had followed, shifting about, like metastases. During the meningeal reaction, the lumbar puncture fluid was turbid but aseptic, and the polynuclears were intact. The meningeal symptoms were severe, suggesting epidemic meningitis, but the storm blew over in six or seven days, without leaving a trace. The young man had had epidemic meningitis four years before.

Paris Médical

Jan. 17, 1920, **10**, No 3

*Roentgenotherapy of Cancer. C. Regaud.—p. 53.
Pulmonary Sequelae in the Gassed. Leclercq and Boëz.—p. 59.
*Jaundice in Scarlet Fever. P. Meurisse.—p. 63.

Roentgen-Ray Treatment of Cancer.—Regaud expatiates on the necessity for even irradiation throughout the whole of the cancer, and gives an illustrated description of how to realize this. Only by this means is the maximal effect induced with the minimum of chances for harm.

Jaundice in Scarlet Fever.—In the case reported by Meurisse the jaundice developed suddenly in the course of severe scarlet fever, the symptoms and retrospective diagnosis indicating a primary angiocholitis or angiocholecystitis coming on with the eruption. The jaundice and other symptoms subsided in a week without any special polyuria or azoturia.

Presse Médicale, Paris

Jan. 24, 1920, **28**, No. 7

*Inaugural Lecture of Obstetrics and Gynecology Course. G. Schickelé.—p. 61.
*Furunculosis. A. Mauté.—p. 64.
*Asthma and Anaphylaxis. P. Pagniez.—p. 65.

Obstetrics at Strasbourg.—Schickelé relates that the first manual on childbirth was published at Strasbourg (1513); the first school of midwifery was organized by Fried in 1728. It was maintained by the city as Fried had no connection with the medical school. Pasteur's first work was done at Strasbourg, and W. A. Freund there was one of the pioneers in the treatment of uterine cancer. Schickelé discusses the physiologic factors involved in producing delivery, saying that distant changes specific to pregnancy are evident in the pituitary, suprarenals and ovaries, but that we must not try to explain all the phenomena by the internal secretions alone.

Furunculosis.—Mauté has been studying vaccine treatment of furunculosis since 1900. He begins at once with a stock vaccine and follows it with an autovaccine, as the latter is always more effectual in warding off recurrence. In the usual adjuvant tonic treatment he warns against arsenic, as this drug seems to rather favor the staphylococcus.

Asthma and Anaphylaxis.—Pagniez reviews the literature on this subject, and on the treatment of asthma with an autoserum, or by desensitization with peptone or by digestive antianaphylaxis. Auld's method of intravenous or subcutaneous injections of peptone, Pagniez' method with peptone by the mouth, and Cordier's with peptone in enemas, are all effectual, but the benefit is short-lived. Hence they are inferior, he says, to the American method of gradual desensitization by vaccination. But the peptone methods are so simple and easy that they encourage further research and experiments in this line. He adds that in the most authentic asthma there may be a psychic element. The asthma with heart and kidney disease and emphysema is merely a form of dyspnea resembling asthma. In true asthma, the attack is a manifestation of anaphylaxis induced by the introduction into the system of some substance which acts as an antigen in the sensitized organism in contact with the substance inducing the anaphylaxis. This condition of anaphylaxis can be made to disappear, at least temporarily by appropriate treatment, even although the nature of anaphylaxis is still a mystery. The Americans cited are Meltzer (1910), Ramirez (1919), and C. Walker (1917 and 1918).

Jan. 28, 1920, **28**, No. 8

*Internal Treatment of Skin Disease. P. Ravaut.—p. 73.
*Functioning of Gastro-Enterostomy. G. Metivet.—p. 75.

Internal Treatment in Dermatology.—Ravaut declares that it is irrational to attack skin disease only from without. "Imagine any one treating the skin lesions of syphilis by local applications alone! And yet the dermatologist is too apt to focus his attention exclusively on the local process. He must be a biologist, not a mere botanist." By modifying the secretions it may be possible to break up the vicious circle, and he has often accomplished this with sodium cacodylate or sodium thiosulphate (hyposulphite) after failure of all local measures. He gives the cacodylate by the vein in a 10 per cent. aqueous solution, giving thus up to 15 or 20 gm. of the cacodylate in the course of three weeks. Some patients were given up to 40 or 50 gm. in two or three months. After improvement of the skin disease, small doses of the drug are kept up for some time to ward off recurrence.

In his experimental research on causes liable to augment the toxicity of arsphenamin, he confirmed the findings of others in regard to the importance of oxidations in this respect, and he found that sodium thiosulphate prevented or neutralized these oxidations. His further assumption that oxidations are an important factor in certain skin diseases was confirmed by the effect of this drug, sodium thiosulphate, on certain long intractable pathologic conditions in the skin. The skin cleared up promptly when the sodium thiosulphate was given by the vein in a 20 per cent. solution, in doses ranging from 4 to 15 gm. a day. He has also given it by the mouth in the same doses but with sugar: 25 gm. of sodium thiosulphate to 125 gm. each of syrup and distilled water. Fine results, he says, were obtained in urticaria, furunculosis, eczema and in arresting the arsenical abnormal redness and puffiness of the skin after arsphenamin treatment. In a case of pityriasis the skin slowly cleared up without any external treatment whatever.

Gastro-Enterostomy.—Metivet suggests that the condition of the stomach ought to be heeded more in making the gastro-enterostomy opening large or small. When there is atony of the stomach, the contents will pour out too quickly unless the opening is small, but it should be at the lowest point. With hypertony and necessity for resting the stomach, the opening should be large and in the antrum, near the lesser curvature. If conditions require it later, the pylorus can then be shut off.

Progrès Médical, Paris

Jan. 11, 1920, **35**, No. 2

*Convulsions in Adults with Pleuropulmonary Lesions. A. Barbé and R. Glénard.—p. 13.
*Tropical Ophthalmology. Terrien.—p. 14.
General Treatment of Syphilis. Bory.—p. 16.
Vaccine Therapy of Influenza. Lochelongue.—p. 18.
Sodium Vanadate and Persulphate in Psychoses with Anorexia. H. Damaye.—p. 19.

Convulsions of Pleuropulmonary Origin.—Barbé and Glénard report five cases of convulsions in male adults, the attacks commencing after unilateral pleuropneumonia. The attacks resembled in some respects epileptic seizures but differed from them in others. They are probably explainable by reflex action from irritation from the preceding pleural and pulmonary disease.

Tropical Ophthalmology.—In this lecture of the colonial medicine course, Terrien discusses filaria, hemeralopia and toxic amblyopia.

Revue de Chirurgie, Paris

September-October, 1919, **33**, No. 9-10

*Streptococcus Septicemia with Jaundice. E. Quénu, G. Küss and M. Brulé.—p. 785.
Chilling Main Factor in Trench Foot. E. Chauvin.—p. 793.
*Mastoiditis and Pott's Disease. G. Portmann.—p. 808. To be cont'd.
*Wounds of Blood Vessels. N. A. Dobrovolskaia.—p. 848

Septicemia Simulating Bile-Duct Disease.—Quénu and his co-workers call attention to the difficulty of the differential diagnosis in cases such as the one described in which recurring attacks of fever with jaundice suggested angiocholitis except for the absence of gallstone colic pains. The woman of 67 had been having these attacks for over a month; the stools were not clay-colored, and tests for spirochetes were negative, but the general condition was growing grave and an operation was being considered when finally the streptococcus was found in the blood, clearing up the diagnosis. An abscess developing served for revulsion; after evacuation of the thick, fetid pus, recovery soon followed.

Mastoiditis and Pott's Disease.—Portmann declares that the connection between mastoiditis and tuberculous caries of the upper spine has not been sufficiently emphasized to date. He analyzes the anatomic and clinical relations, giving instances of suboccipital Pott's disease mistaken for mastoiditis, and vice versa, and the involvement of one region from the other. His long illustrated article is to be continued.

Traumatic Aneurysms, and Wounds of Vessels in General.—Dobrovolskaia tabulates the details of sixty-two cases at a

Petrograd hospital, and describes how it is possible to estimate the collateral circulation with an aneurysm by means of the sphygmomanometer records of the pulse below the aneurysm. The local, general and collateral blood pressure reveal the conditions in the circulation of the limb. Oppel argues that the vein must be ligated along with the artery, even when the vein is normal. This reduced circulation favors development of collaterals, he claims, but the experiences here related did not show any advantage from this in the eighteen cases in which it was applied. In one case there was aseptic gangrene of the leg muscles after ligation of the popliteal vein. The foot kept its normal aspect throughout, as the subcutaneous venous system had maintained the circulation.

Revue de Médecine, Paris

November-December, 1919, **38**, No. 6

*Mild Tuberculous Pleurisy. A. Dufourt and M. Ségard.—p. 545.
*Antitoxic Treatment of Typhus. W. Vignal.—p. 562.
*Apical Pleuritis. C. Roubier.—p. 576.
Recovery from Homicidal Delirium of Jealousy. R. Benon and P. Gouriou.—p. 587.

Mild Recurring Tuberculous Pleurisy.—Dufourt and Ségard ascribe to the exceptional energy of the defensive forces the atypical course of certain tuberculous processes in the lungs and pleura. In this article they refer in particular to what they call benign tuberculous corticopleuritis, with recurring foci, and to chronic congestions of the lungs of the so-called arthritic type. The foci and the physical signs change about in the former, and periods of latency intervene. A special feature of this form is the occasional intense pain, not paralleling the physical signs. Another feature is that the lesions gradually subside, never passing into the ulcerative-cheesy stage. They have encountered cases of this kind at all ages. The most constant symptom is the dyspnea. Patients complain of this even before the appearance of the pain. They get out of breath at every prolonged exertion, and this dyspnea persists to some extent even in repose, reflecting with some precision the intensity of the congestion in the cortex of the lung and in the pleura. After a climbing exercise, there may be paroxysmal dyspnea with a sensation of constriction of the chest, anguish and extreme tachycardia. Then for an hour or two the patient expectorates profusely, an actual alveolar serous effusion. In an hour or two the whole paroxysm is over. The pains that come and go throughout the whole course are of the dull, permanent neuralgia type, or like a set of needle pricks, brought on by laughing or coughing or abrupt movement of the chest. The asthenia, tenacious pains, hampered breathing, palpitations and tachycardia often entail neurasthenia in time in the rare cases presenting the complete clinical picture.

Dufourt and Ségard never found tubercle bacilli, but they explain the spurts of congestion as the result of local anaphylactic shocks to tuberculin manufactured in the lesions. Anything such as extra physical exertion, climbing, or injection of tuberculin, mobilizing the bacillary toxins in the focus, brings on this wave of congestive phenomena. The anaphylaxis gradually merges into immunity, and the symptoms finally subside completely. Sanatorium treatment and repose, revulsion to relieve the pain, and other physical measures to soothe the heart and reduce the tendency to congestions are indicated. High altitudes and exposure to wind are formally contraindicated. A weakly arsenical-sulphur water has sometimes hastened the cure when the acute phase is past. One patient improved with sea bathing on the Mediterranean coast in calm summer weather. Drugs, they say, are useless or harmful, except possibly calcium; some patients inclined to hyperacidity improved under alkalines.

Antitoxic Treatment of Typhus.—Vignal treated nineteen patients at Bucharest, with an exceptionally toxic form of typhus, with infusion by the vein in the twenty-four hours of 500 c.c. of a solution of 6.5 gm. sodium chlorid and 0.4 or 0.5 gm. chlorin to the liter. This was prepared according to Danielopol's directions by passing a current of chlorin through distilled water and adding the sodium chlorid. The chlorid content is determined with sodium hyposulphite. Vignal found that the symptoms of profound toxic action became rapidly attenuated under these infusions. He analyzes his experience in detail, saying that the few deaths in the series occurred from pleurisy or streptococcus sepsis after the typhus had subsided, but the leukocytes still numbered 40,000. In one case the condition was not regarded as grave enough for the infusion as the leukocytes numbered only 20,000, but the fourteenth day they ran up to 23,400, and the infusion then came too late, the man dying the next day. The drop in the leukocyte count and the improvement of the other symptoms from toxic action followed promptly on the infusions.

Apical Pleuritis.—Roubier describes the sounds characteristic of pleuritis at the apex and their interpretation. In thirty of the fifty-three cases in this category, the auscultation findings were exclusively or predominantly restricted to the left apex. The condition has a favorable prognosis, whether of tuberculous origin or not.

Schweizerische medizinische Wochenschrift, Basel

Jan. 15, 1920, **50**, No. 3

*Varicella and Herpes Zoster. E. Feer.—p. 41.
*Legal Status of Abortion in Switzerland. P. Jung.—p. 42.
*Therapeutic Abortion. A. Gautier.—p. 46.
*Vernes Serologic Test for Syphilis. R. Preiswerk.—p. 51.

Chickenpox and Herpes Zoster.—Feer relates from the children's hospital at Zurich that a boy of 9 developed herpes zoster fourteen days after an infant in a connecting room had shown signs of chickenpox, and had been removed to another part of the building. The boy with herpes was not removed, and seventeen and twenty days after the onset of the herpes the two other children in the same room (three beds) developed chickenpox. The intervals thus from the first case of varicella were thirty-one and thirty-four days, and Feer thinks there can be no doubt that the herpes represented the second generation of the varicella, bridging the gap between the first and the two late cases. No other cases were known in the environment. In Bokay's compilation of thirteen cases, most of them from his own experience, the herpes was the first to appear, and the varicella developed secondarily, while in Feer's epidemic the varicella opened the sequence.

Legal Status of Abortion in Switzerland.—Jung suggests a rewording of the bill pending in the legislature to legalize therapeutic abortion and prevent abuses. He urges that therapeutic abortion should be ranked the same and be governed by the same laws as any operation. In the following article, Gautier, professor of penal law, discusses therapeutic abortion from the legal standpoint, and emphasizes that the presence of the third interested party, the *nasciturus*, imprints a unique stamp on abortion proceedings. But, he remarks in conclusion, whatever laws may be passed, conditions will continue the same: Good physicians will do what they think is right under the circumstances, and the unscrupulous will do as they please. *Les mœurs peuvent ici plus que la loi.*

The Vernes Colorimeter Serologic Test for Syphilis.—Preiswerk applied the Vernes technic in 1,200 cases and obtained parallel results to the Wassermann test in 76.7 per cent.; totally contradictory results in 1.1 per cent., and slighter divergence in the others. The technic is comparatively simple and easy, but the ingredients are not so constant as Vernes claims. Fresh pig serum is used instead of the rabbit amboceptor, and guinea-pig hemolysis is determined with a color scale. The organ extract is made with ethylene tetra chlorid acting on desiccated myocardium tissue from the horse.

Annali d'Igiene, Rome

September, 1919, **29**, No. 9

*Lice and Typhus. G. Alessandrini.—p. 557.
Cultivation of Micrococcus Gonorrhoeae. M. Carpano.—p. 599.
Pathogenic Blastomycetes. A. Ori and M. Ciaccia.—p. 604. Conc'n.
Typhus During the War. G. Sampietro.—p. 620. Cont'n.

Lice and Typhus.—Eight plates of the microscopic findings in lice confirm Alessandrini's statements as to prophylaxis of lice-borne diseases. The only rapid, practical and certain

means for extermination of lice, he reiterates, are with dry heat and with sulphurous anhydrid. It is immaterial whether the latter is generated by burning sulphur or by the method he has found most convenient from the action of sulphuric acid on sodium thiosulphate (hyposulphite). He places the clothing to be deloused in a jar containing a 4 per cent. solution of commercial sulphuric acid. When the clothing is saturated throughout, he pours in double the amount of a 20 per cent. solution of sodium thiosulphate, and the contents of the jar are turned and shaken up together. An air-tight cover is desirable, but not indispensable. The chemical reaction between the two fluids generates sulphurous acid gas, while the sulphur is precipitated on the insects, and is found deep in their respiratory organs, and the nits are killed at the same time. He adds that the cotton, wool, silk and linen articles, in seven different colors, used in his tests, kept in the fluids from ten to twenty minutes and then rinsed thoroughly in water, were not altered in their substance, and only a very few, after drying, were found to be slightly uniformly faded, especially the pink and yellow tints. His tests were made with both head and body lice, and with several types of similar parasites of the pig, etc.

Pediatria, Naples

February, 1920, **28**, No. 3

*Whooping Cough. O. Cozzolino.—p. 113.
*Progressive Muscular Dystrophy. Giulio Milio.—p. 118.
*Influenza and Lactation. M. Rollandini.—p. 135.

Whooping Cough. — Cozzolino denounces the theory preached by A. Czerny that whooping cough is merely the form imprinted by a neuropathic predisposition on an ordinary catarrhal infectious process in the air passages. Czerny's pupil, A. Niemann, has recently presented what he thinks is further evidence to sustain this theory, namely, that when influenza swept through the infant asylum in his charge, nine of the sixty-two infants developed whooping cough as the acute stage of the influenza subsided. Cozzolino refuses to accept this evidence, as no search was made for the Bordet-Gengou bacillus in the throats. Although no visitors were admitted to the asylum, there might have been a carrier among the nurses. The scattered appearance of the whooping cough among the inmates merely confirms that all infants are not susceptible to whooping cough. On the other hand, the vanishing of the Bordet-Gengou bacilli from the throat after the fourth week of whooping cough; the recent success with prophylactic vaccination with this bacillus, and the development of antibodies in the vaccinated; the immunity conferred by one attack, and the possible transmission of the disease from the mother to the fetus, form a solid basis for assumption of a specific causal micro-organism.

Progressive Muscular Dystrophy.—Milio reports nine cases in children from 6 to 11 years old encountered in the last ten years. They represent the five types of this pathologic condition. No hereditary tendency was apparent, but the condition developed after an acute infectious disease in some of the children; after measles at 11 months in one, but in others no factors were known that could throw light on the origin.

Influenza and Lactation.—Rollandini concludes from the experiences at the children's clinic at Turin that there is no need to interrupt lactation if the mother has influenza. She should be encouraged to continue nursing the child, unless there are grave complications. But precautions should be taken against infecting the child. It should not be kept in the room with the mother, and should be brought in only for feedings. The nipples should be washed each time before giving to the child, and the mother should be warned not to speak or cough. She should hold a handkerchief over her mouth as long as the child is near. No resort should be made to artificial feeding unless absolutely necessary, and then only partially, if possible.

Policlinico, Rome

Jan. 12, 1920, **27**, No. 2

Present Tendencies in Study of Pathology. A. Zeri.—p. 31.
Poisoning from Castor Oil Seeds; Two Children. M. Gioseffi.—p. 39.

Jan. 19, 1920, **27**, No. 3

*Cultivated Digitalis. G. Gaglio.—p. 63.
*Heredity in Cardiovascular Disease. G. Galli.—p. 65.
Calcium Treatment in Surgical Tuberculosis. L. Durante.—p. 68.

December, 1919, **26**, Surgical Section No. 12

Painless Childbirth. G. Cuzzi.—p. 385.
Local Use of Ether in Surgery. G. Fantozzi.—p. 390. To be cont'd.
Ultraconservative Operations on Limbs. Laurenti.—p. 406.

Cultivated Digitalis.—Gaglio reports the results of pharmacologic study of some cultivated *Digitalis purpurea* which demonstrated that it was as potent as the best from other sources. It requires an acid soil and protection against excessive heat.

Heredity in Cardiovascular Disease.—Galli remarks that few physicians seem to appreciate the frequency of the inherited tendency to cardiovascular disease in certain families. A number of instances from his own practice are compared with some on record. Rapid pulsation of the heart is often observed in several members of a family; he noted paroxysmal tachycardia in one man and in two of his children. What he calls hereditary myocardism is even more common, the subjects not able to stand as much physical exercise as others, panting after moderate exertion; the heart and the aorta are smaller than the average and the blood pressure lower. The young sometimes outgrow this under careful hygiene and progressive exercising, but exertion beyond what the subject can bear may do irreparable harm, as in a case described in which a mountain climbing excursion was too much a strain, and the young man died within two years. His father died a few years later of heart disease, and a sister at 13 from acute asystoly. One brother of 16 is weak and tires readily and his heart is unusually small. Another younger brother has a more robust constitution but he too tires easily. The family tree of another patient shows the great grandfather dying of apoplexy at 70 and one of his sons at 64, while two other sons died of heart disease at 51 and 70, and the fourth of tuberculosis in childhood. In the six children of the third generation one died at 41 of heart disease, three of cerebral hemorrhage at 51, 46 and 45, and the others of tuberculosis or Adams-Stokes disease. One of the thirteen great grandchildren has a cylindrical thorax. Galli has been preaching for years the importance of compiling data on heart disease, following the cases decade after decade and investigating the family tree. The military systems of the world have it in their power now, he continues, to inaugurate and carry out this systematic and organic study of pathologic conditions in the circulatory system, amplifying and continuing the work done during the war in this line. By this means positive data will be accumulated to offer to hygienists and legislators for prophylactic action.

Riforma Medica, Naples

Nov. 29, 1919, **35**, No. 48

*The Intermediate Metabolism in Nephritis. A. Barlocco.—p. 1041.
Paratyphoid A in Macedonian Campaign. C. Vallardi.—p. 1046.
Neurosyphilis and Predisposing Factors. G. Pighini.—p. 1050.
*Prophylaxis of Renal Tuberculosis. D. Taddei.—p. 1056.

The Metabolism with Uremia.—Barlocco reports ten cases of nephritis studied by Bang's micromethod, including one of so-called pseudo-uremia and one of uremia with convulsions. In both of these latter cases the blood and urine findings were normal for a time after the symptoms had developed. Only later came the period with evidences of profound derangement of the nitrogen metabolism. In the eight other cases the uremia seems to be merely from retention of nitrogenous waste, but in two of these latter cases there seems to be a primary exaggerated production of nitrogenous waste in the tissues, and the excess passes only tardily into the blood and urine. These cases confirm Maragliano's theory that primary or secondary lesions in the tissues may be an important element in the clinical picture of nephritis. They also sustain the analogy between uremia and the toxicosis from splitting of albumin. Even in some of the other cases there were certain features suggesting increased production of waste, in addition to the decreased elimination. In still another class of cases, he adds in conclusion, the uremia may be traced to changes in

the vessels alone, and the metabolism is not a direct factor, or has merely a slight, secondary influence.

Prophylaxis of Renal Tuberculosis.—Taddei asserts that renal tuberculosis is widely prevalent and that it almost always escapes detection, at least during the period when a nephrectomy offers the greatest chance of success. It is an essentially chronic disease, and it may develop insidiously with periods of remission. One of his cases was inoperable from bilateral pyonephrosis when first seen, but the patient is still under observation ten years later. The first, the albuminuric phase, is followed by the pyuric phase, with or without slight symptoms from the bladder. The involvement of the bladder forms the third phase. Usually it is only after the practitioner has wasted some time trying to cure the "cystitis," that he thinks of the kidney and calls in a surgeon, just before the fatal progression into the fourth, the terminal stage. Renal tuberculosis is of blood-borne origin, Taddei reiterates, and every young person with albumin and pus or blood in the urine (not explainable by gonorrhea or other infectious disease or adnexitis), should be suspected of renal tuberculosis even although the general condition is good. Note the transparency of the urine, the tender points for the kidney, palpating for them with the hands superposed, working from above downward and from within outward along the line from the umbilicus to the thigh, following the pulsation of the iliac artery down to the passage of the ureter into the superior strait of the pelvis. An absolute diagnosis is possible only with discovery of the tubercle bacillus, and with this, the surgeon should be called in at once. Krönlein found a tuberculous process in the kidney in 29.8 per cent. of the cadavers examined, and all authors agree that renal tuberculosis is unilateral in the first stages in 88 per cent. of the cases at least. By the time severe cystitis has developed, both kidneys are usually involved.

Archivos Españoles de Enf. del Ap. Digestivo, Madrid

November, 1919, **2**, No. 11

Diagnosis of Gastric Cancer. T. Hernando.—p. 641; Idem. J. González Campo.—p. 645.
*Gastric Ulcer. L. Urrutia.—p. 676. Idem. F. Gallart and F. Ribas. —p. 702. Idem. C. G. Peláez.—p. 705.
*Remote Results of Gastro-Enterostomy. J. MacDonald and W. A. Mackay.—p. 726.

Gastric Ulcer.—This entire issue of the *Archivos* is devoted to the transactions of the subsection on disease of the digestive apparatus at the First National Medical Congress in Spain last spring. Urrutia insists that international statistics show that ample resection of the stomach does not have a much higher death rate than simple gastro-enterostomy while the results are incomparably better. In a recent series of 82 cases of resection the mortality was 4.8 per cent., these patients succumbing to acute dilatation of the stomach, pneumonia, paralytic ileus or chloroform jaundice. In a previous series of 117 cases the mortality was 6.6 per cent., while it was 6 per cent. in 115 gastro-enterostomy cases. He mentions C. Alvarez' proposal to treat gastric ulcer by stretching the fifth, sixth and seventh intercostal nerves on both sides and resecting the fifth. This may be useful with rebellious hyperchlorhydria, but seems irrational for an already established hard ulcer.

Gallart and Ribas say that the cicatricial changes found in the pylorus and elsewhere in the stomach testify that gastric ulcers can and sometimes do heal spontaneously. They applied Alvarez' nerve stretching technic in 2 cases, but are unable to pass a decisive judgment on it. In only 8 per cent. of their gastric ulcer cases were conditions favorable for an operation; in all the others there were adhesions, multiple ulcers in 12 per cent., and extensive and intense gastritis was the rule. They state that the mortality from resection is from 20 to 30 per cent. in general, while gastro-enterostomy has a death rate of only 3 or 4 per cent. and definite results are realized in 65 per cent. of the cases. In 2 of their cases cancer developed later. When there were disurbances they were almost always from growing up of the new opening, or from peritoneal bands, or adhesion to the pancreas, or irreparable lesions of the gastric glands. Peláez' mortality in 128 gastro-enterostomy cases was direct in 2.14 per cent.; total, 11.42 per cent. In 37 of his 140 peptic ulcer cases, the lesion was in the duodenum.

Gastro-Enterostomy.—MacDonald and Mackay report 1.27 per cent. mortality in 314 gastro-enterostomy cases. In 6 of 19 cases of ulcer on the lesser curvature the operation brought little if any relief.

Medicina Ibera, Madrid

Dec. 13, 1919, **9**, No. 110

Reinfection with Syphilis? J. Sánz de Grado.—p. 185.
Presbyopic or Adynamic Astigmatism. J. González.—p. 186.

Dec. 20, 1919, **9**, No. 111

Exercise and Repose in Tuberculosis. Garcia Triviño.—p. 193.

Dec. 27, 1919, **9**, No. 112

Surgical Complications of Influenza in Children. Blanc y Fortacin. —p. 201.
Cheesy Tonsillitis. Sicilia.—p. 202.

Progresos de la Clínica, Madrid

November, 1919, **7**, No. 83

Drug Treatment of Uricacidemia. R. Mollá.—p. 191.
*Renal Tuberculosis. M. Barragán Bonet.—p. 199. Conc'n.
*Thyroid Insufficiency After Influenza. W. López Albo.—p. 217.
Temporizing with Extra-Uterine Pregnancy. Vital Aza.—p. 220.
Malaria in Morocco. J. A. Romera y Domingo.—p. 228.

Renal Tuberculosis.—Barragán affirms that medical treatment of renal tuberculosis should be considered only when operative measures are out of the question, but heliotherapy and other general measures are useful adjuvants at all stages. He declares that one is safe in removing the kidney for unilateral renal tuberculosis when the Ambard constant is good, even when it is impossible to explore the bladder. But as a rule, catheterization of both ureters is the only means for a positive diagnosis of whether one or both kidneys are affected. When both are involved, nephrotomy of one and nephrectomy for the other may give unexpectedly favorable results.

Thyroid Insufficiency After Influenza.—López Albo has reported two cases of extreme somnolency and headache after influenza, cured or materially improved by thyroid treatment. He here describes a third case in which the postinfluenzal hypothyroidism took the form mainly of neuralgias, which disappeared likewise under thyroid treatment. This patient was a man of 35.

Revista Cubana de Obstetricia y Ginecología, Havana

May-July, 1919, **1**, Nos. 5-7

*Dermatoses of Pregnancy. V. Pardo y Castelló.—p. 235.
Cancer in Stump of Uterus. M. Costales Latatú.—p. 249.
Criminal Abortion. A. Barreras y Fernández.—p. 336 .
*Metrorrhagia in Virgins. M. Costales Latatú.—p. 350.

Certain Dermatoses of Pregnancy.—Pardo reviews the types of herpes, molluscum and impetigo peculiar to pregnancy, and comments on the grave prognosis with the latter as it is a sign of septicemia. With other dermatoses frequent in pregnant women, he warns against the use of starch in powders, especially for eczema of the vulva as the vegetable granules ferment readily. An 8 per cent. solution of aluminum acetate or diluted Burow's solution helps to dry up oozing eczema in this region. Pruritus requires treatment of the causal autointoxication, restriction to a milk diet, and sedatives. Local measures give only transient relief, but a chloral lotion or cocain salve, or touching with silver nitrate may be indicated. The roentgen rays, ¼ H. twice a week may reduce the pruritus and cure it completely in two or three applications. Pardo warns against the factitious dermatoses of hysteria: "Note the regularity and symmetry of the lesions, the fact that they occur only on regions readily reached by the hands, and the track of a drop of caustic running down."

Metrorrhagia in Virgins.—Costales relates an extreme case in which the robust girl of 18 had been almost exsanguinated by two months of persisting uterine hemorrhages. She had been given iron, cod liver oil, etc., without avail, but under ovarian treatment the hemorrhages ceased and she soon recuperated. Polyglandular treatment proved effectual in

some other cases of the kind, but this young woman had two relapses under polyglandular treatment. The improvement became constantly progressive only after the ovarian treatment alone was pushed.

Revista Médica Cubana, Havana

August, 1919, **30**, No. 8

Clinical Value of Electrocardiography. J. M. Martinez Cañas.—p. 463. Conc'n in No. 9, p. 532.
*The Medical Literature of Cuba. J. Le-Roy y Cassa.—p. 481.

The Medical Literature of Cuba.—The Journal has already mentioned Trelles' compilation. Le-Roy remarks that Cuba is the only country of the American continent that has its scientific bibliography complete.

October, 1919, **30**, No. 10

*Bronchopulmonary Spirochetosis in Cuba. A. A. Méndez.—p. 593.
Cesarean Section for Placenta Praevia and for Eclampsia. J. A. Ortiz. —p. 595.
*The Arterial Tension in Tuberculosis. Amador Guerra.—p. 604.

Bronchopulmonary Spirochetosis.—Méndez has encountered one acute and three chronic cases of Castellani's spirochetosis in eastern Cuba. The diagnosis in all had been pulmonary tuberculosis until corrected by discovery of the spirochetes in the sputum and the absence of tubercle bacilli. Under arsenic treatment, the spirochetes disappeared in the acute case and the chronic were much improved, and some recovered completely under this treatment.

Arterial Tension in Tuberculosis.—Guerra comments on the favorable prognosis when the arterial tension in tuberculosis is found normal or above. A sudden rise in the blood pressure is liable to induce hemoptysis. A sudden drop is a sign of acute exacerbation or generalization of the process. The habitual low pressure in the tuberculous may be explained by bacterial toxins or by suprarenal insufficiency.

Revista de Medicina y Cirugía Prácticas, Madrid

December, 1919, **125**, Nos. 1581-1584

Unusual Form of Mastoiditis. E. Botella.—p. 299.
Parenteral Injection of Milk in Eye Diseases. S. Garcia Mansilla. —p. 329.
Case of Excessive Somnolency. R. del Valle y Aldabalde.—p. 361.
Value of Tonics in Treatment of Psychoses. Idem.—p. 364.
*The Internal Secretions in Their Relations with the Skin and Its Appendages. Eusebio de Oyarzabal.—p. 393.

The Internal Secretions in Relation to the Skin.—De Oyarzabal reviews this large field, telling of the various data accumulated by different clinicians in this line. In his own practice, as scleroderma developed in one girl of 18, menstruation stopped. Others have reported similar experiences, and have noted the relative frequency of scleroderma with symptoms of the menopause. He cites Sabouraud's theory that alopecia is traceable to the excessive internal secretion of the sexual glands. In seborrheic alopecia, the secretion of sebum is excessive, and this does not occur until the sexual glands are developing. "Children never have seborrhea." The question of the relations between the endocrine and the sebacceous glands may repay study and may throw light on baldness. Organ extract treatment is justified in all cases of disease of the skin or appendages in which endocrine deficit is suspected. But we are disarmed with disease traceable to excessive functioning of endocrine glands, unless we can learn to stimulate the antagonist glands. Some have reported favorable experiences with mesenteric gland extract in treatment of scleroderma, and others with epinephrin in erythromelalgia. In one case the vasomotor disturbances in hands and feet for twelve years subsided under suprarenal treatment.

Revista Sud-Americana de Endocrinología, Buenos Aires

September, 1919, **2**, No. 9

*Vaccine Treatment of Typhoid. G. Grapiolo.—p. 329. Conc'n.

Vaccine Treatment of Typhoid.—Grapiolo gives a very favorable verdict on vaccine treatment as applied in 234 cases of typhoid fever. No untoward effects were noted in any instance. The death rate was from 7.62 to 7.96 per cent.

Deutsche medizinische Wochenschrift, Berlin

Nov. 20, 1919, **45**, No. 47

Acute Injuries of Female Genital Organs. R. T. von Jaschke.—p. 1289.
Salvarsan in Recurrent Fever. B. Glaserfeld.—p. 1296.
*Diagnostic Value of Glycemic Reactions. Hahn and Offenbacher.—p. 1298.
*Botulism. L. Bitter.—p. 1300.
The Rôle of Heredity in Disease. H. W. Siemens.—p. 1302.
Pupil Changes in Barbital Poisoning. C. Römer.—p. 1305.
*Tendon Transplantation for Radial Paralysis. Gaugele.—p. 1306.
*Radical Operation for Inguinal Hernia in Infant. G. Schmidt.—p. 1308.

The Diagnostic Value of the Glycemic Reaction.—Hahn and Offenbacher remark on the great value for practical diagnosis of the behavior or "reaction" of the blood sugar in response to a definite, uniform test meal: The blood sugar value was determined fasting. Then 50 gm. of glucose were given in 300 c.c. of tea. Every hour the urine and the blood sugar values were determined, with care to prevent the patient from eating or drinking anything, or moving about too much, during the experiment. This moderate dose (50 gm.) was used because it would be readily absorbed and furnish distinct differential values. It was also feared that diabetics might be harmed by larger doses. Double determinations were made which agreed very closely, as a rule. Bang's iodin micromethod was used for the determinations. The experiment was applied to healthy subjects as well as to patients with various diseases. The results are shown in glycemic-reaction curves. The writers give up to 0.11 per cent. blood sugar as the normal figure, fasting; values from 0.12-0.16 per cent. they designate as slightly above normal or suspicious, and a sugar content of more than 0.16 they characterize as pathologically hyperglycemic.

Botulism.—Three different outbreaks of botulinus poisoning in Kiel within a year, which resulted in three deaths, induced Bitter to study into the question. The eating of salted herring caused the first of the three fatal cases. The herring had a typical rancid odor, and *Bacillus botulinus* was cultivated from two herring. Others fed to mice exerted a toxic effect. Too little vinegar had been used in preserving them, the pickle containing only 0.6 per cent. acetic acid. Experimentation showed that botulinus strains of various origin grew almost unchecked in nutrient agar containing up to 0.1 per cent. acetic acid. It was found, however, that a pickle containing 2 per cent. or more of acetic acid would prevent the development of poison from *B. botulinus*. It has also been shown that a 10 per cent. brine, such as is usually employed, will protect food preserved in it against the botulinus. The second outbreak in Kiel, comprising four cases, resulted from the eating of rancid-smelling raw ham. There were no fatalities, although the cases were typical and severe. In the third outbreak three persons were affected by eating salted herring, and two of these died. Bitter recommends that in the case of meat, fish and sausage poisoning all manifestations resembling botulism should be made reportable by law. He places the case mortality from botulinus poisoning in Germany at 16 per cent. Greater publicity should be given to the fact that if preserved vegetables and meats have a peculiar disagreeable odor, taste or appearance there is great danger in their consumption, and that if they are used, though they look suspicious, they should be thoroughly cooked, though it is true that cooking sometimes fails to protect. As a rule, *B. botulinus* is found only in food carelessly preserved or stored in too warm a place. Bitter knows of only one instance in which *B. botulinus* has been isolated from other than damaged foods. Kempner and Pollack succeeded in isolating *B. botulinus* from the feces of pigs.

Tendon Transplantation in Radial Paralysis.—Operations on the nerves in radial paralysis having failed to accomplish the expected results, Gaugele thinks that Perthes and others have done a good service in reintroducing the method of tendon transplantation. Tenodesis, as recommended by Perthes, may be indicated if the paralyzed muscles look pale or yellow, but ordinarily he thinks it can be dispensed with, since the operation is thus made more complicated. He does not approve of separating the paralyzed muscles from the tendons, as he finds that such muscles often recuperate when put to work. In place of Perthes' method of uniting

the flexor and extensor muscles, he prefers Vulpius' buttonhole method. The distribution of the flexor muscles is best made, he thinks, in the direction that the extensor muscles run, that is to say, the flexor carpi ulnaris is attached to the extensor communis and extensor pollicis longus, and the flexor carpi radialis to the other muscles of the thumb. The extensor carpi ulnaris and the extensor carpi radialis longus may, likewise, be attached to the flexor muscles.

Radical Operation for Inguinal Hernia in Infant.—Schmidt reports an operation for inguinal hernia on a 10-month-old infant. Some of the noteworthy features of the case were the presence of the appendix in the hernial sac (especially strange in an infant); repeated inflammation of the appendix in the hernial sac, and the favorable course, which supports the view that inguinal hernia should be operated on in earliest childhood. If the operation had been postponed, the child would have been continually exposed to incarceration of the hernia and to appendicitis. A truss might have aggravated the danger from appendicitis. The operation was performed without anesthesia and was borne well in spite of the fact that the infant was not sturdy.

Deutsche Zeitschrift für Chirurgie, Leipzig

June, 1919, **150**, No. 1-2

*Keloids. L. Freund.—p. 1.
*Operation for Inguinal Hernia. Drüner.—p. 7.
*Trophic Changes After Injury of Nerve. F. Breslauer.—p. 50.
*Traumatic Aneurysm in the Liver. K. Käding.—p. 82.
*Exuberant Callus. P. Sudeck.—p. 105.

Keloids Without Known Cause.—Freund describes a case which not only throws light on the origin of keloids, but points the way to effectual treatment. The keloids developed spontaneously on the man of 31, different ones presenting the features of all known varieties of primary and secondary keloids. There was always some local defect of the skin that invited the keloid, but the keloid growth did not develop at every defect. He seemed to display both a general and a local predisposition for the development of keloids. Freund accomplished the cure by excision into sound tissue and then exposing the field, without suturing, to the roentgen rays, up to the erythem dose, allowing only two or three days to elapse before beginning the raying. No effect was apparent from radium treatment of some of the keloids. He has applied this operative plus postperative irradiation in nine cases to date, and all seem to be permanently cured.

Inguinal Hernia.—Drüner compares the various technics in vogue for correction of inguinal hernia, and gives an illustrated description of the modified Hackenbruch operation. He has applied it with superior results in 509 cases of inguinal hernia, all in hard-working men in a coal mine district. The hernia returned after the Bassini operation in 21.4 per cent. but after his modified technic in only 4 per cent. It aims to give the spermatic cord more room while insuring the greatest solidity in the region.

Trophic Changes After Injury of Nerve.—Breslauer has been studying on himself, on men with war wounds of nerves, on other patients, and on dogs, the local effect of heat or of mustard oil applied to the area innervated by a damaged nerve. The region loses in a few weeks the capacity to react with active hyperemia to irritation from heat, mustard oil or other stimulus. This suggests that the lack of this normal hyperemia defensive reaction allows irritating factors to injure the skin, and thus to set up processes which we call trophic changes. They are thus essentially the result of defective conditions in the circulation, and the nerve injury is responsible for this. Breslauer's experiments showed further that although the capacity was lost for active hyperemia reaction to the irritation from the mustard oil, etc., yet the capacity for vasoconstriction under the application of cold or epinephrin persisted unimpaired and indefinitely. He theorizes to explain this opposite behavior of the vasodilating and constricting apparatus. The skin does not redden under mustard oil when all sensation has been abolished by nerve blocking. As sensation returns, and the area begins to smart, it begins to turn red too. But the vasoconstricting action of epinephrin proceeds the same whether there is sensation in the region or not.

Aneurysm in the Liver.—Käding summarizes forty-two cases of aneurysm in the hepatic artery, all fatal but one, and four cases in which the aneurysm was inside the liver, all fatal. In a personal case the aneurysm had developed after a gunshot wound, and it had opened into the gastrointestinal tract, but the man recovered after ligation of the hepatic artery. The circulation of the liver is still adequate as the complete recovery in this case testifies, confirming the results of ligation of this artery in dogs.

Exuberant Callus.—A scrap of periosteum torn off may explain the tendency to excessive production of callus in certain cases, Sudeck explains, with roentgenograms of some typical cases demonstrating this etiology. They disprove the theory of traumatic ossifying myositis as responsible for redundant callus around the bone.

Zentralblatt für Chirurgie, Leipzig

Jan. 10, 1920, **47**, No. 2

*Mammary Cancer and Postoperative Raying. G. Perthes.—p. 25.
*Differential Pressure Mask for Empyema. O. Goetze.—p. 29.
*Reconstruction of Urethra. W. Budde.—p. 32.

Mammary Cancer.—Perthes compares the ultimate outcome in 88 cases of mammary cancer rayed after mammectomy, with 130 cases not given the postoperative irradiation, and 70 cases in which only inadequate exposures were made. There was recurrence within a year in 41 per cent., 28 per cent. and 38.5 per cent. in these groups respectively, but among the recurring cases there was no local recurrence in 18, 11 and 11 per cent., respectively. These figures speak decidedly against any improvement of the statistics from the postoperative raying. The recurrences within a year were almost twice as numerous as in the unrayed cases, and the deaths from internal metastasis without local recurrence were four times as numerous.

Mask for Differential Pressure in Treatment of Pleural Empyema.—Goetze refers to after-treatment when the aim is to realize expansion of the long compressed lung. The mask he has constructed for the purpose is just the reverse of Kuhn's aspiration mask, as inspiration is free and only expiration is checked with an adjustable valve. The mask has been worn day and night by various patients, and complete expansion of the lung resulted even under the most unfavorable conditions. The mask is also useful during resection of ribs and other operations on the thorax.

Subcutaneous Pedunculated Skin Flaps.—Budde describes his technic as applied in reconstruction of the urethra, although he says it can be applied to any passage or area. He also asserts that it is based on a new principle, namely the use of a square of skin, the sides sutured together to form a tube, while enough subcutaneous tissue is taken up with the skin to permit of suturing without the needle passing through the epidermis. The subcutaneous tissue below the lengthwise center of the flap is not severed so the skin tube is pedunculated its entire length. The flap for the urethra is taken from the lower aspect of the scrotum; it is about 3 cm. wide and the peduncle is thus formed by the septum tissue. The tube thus formed over a large catheter is then worked through a tunnel dug for it under the skin to the gap in the urethra, exposed through the perineum. As the tube is drawn through the tunnel, its "mesentery" is dragged along with it. The tube is turned over endwise to be drawn through, to bring the suture on top. Depilation of the skin of the scrotum is usually a necessary preliminary from fear of incrustation of hairs. The reconstruction of the urethra by this technic can be accomplished at one sitting, thus providing an epithelium-lined, strong and almost normally nourished tube. Flaps with this subcutaneous pedunculization might be utilized to repair defects on the cheek, etc.

Zentralblatt für Gynäkologie, Leipzig

Jan. 10, 1920, **44**, No. 2

*Brain Lesions from Birth Trauma. R. Beneke and F. Zausch.—p. 34.
*Ovarian Tumors with Fetal Teratoma. L. Fraenkel.—p. 41.
Latent Microbism of the Vagina in Relation to Leukorrhea. A. Loeser.—p. 46.
Local Injection of Turpentine in Treatment of Adnexitis. A. Fuchs.—p. 52.

Obstetric Injury of the Brain.—In the first two of the three infant cadavers described there was extensive hemorrhage in the ventricle. The hemorrhage evidently proceeded from the deep cerebral vein. Undue stretching of the corpus callosum would explain this, and also the laceration of the tentorium sometimes observed. In the other cadaver the findings were those of patches of softening of the brain, probably the result of ischemia from vascular spasm. Kruska has compiled twenty such cases. The child seemed to be normal at first. Then left hemiplegia developed, and finally hemorrhage in the affected region of the brain, with death the twelfth day.

Ovarian Tumors with Pathologic Pregnancy.—In Fraenkel's case a tumor had developed in each ovary along with the teratomatous fetus in the uterus, with hydramnion. After expulsion of the macerated fetus at the sixth month the ovarian tumors gradually retrogressed. Conditions thus were like those in fifty cases on record in which ovarian tumors developed with vesicular moles, and retrogressed after their expulsion. In the roentgen study of this case the advantages of preliminary injections of oxygen into the abdominal cavity were striking.

Zentralblatt für innere Medizin, Leipzig

Jan. 10, 1920, **41**, No. 2

*Micro-Analysis of the Blood. J. Feigl.—p. 17.

Micro-Analysis of the Blood.—Feigl suggests other lines in which Bang's micromethod can be instructively applied, with slight modifications, as in Ljungdahl's research on volatile substances in the blood. The latter uses capillary tubes for the weighing procedure, instead of Bang's paper, for determination of the acetone in the blood. This capillary technic has a certain number of advantages for research of different kinds in this line, especially for analysis of lipoids. Instead of Bang's paper, Feigl uses asbestos fibers. They take up the blood as well as the paper, and allow estimation of the ash and even of its separate elements. Extremely small quartz beakers with platinum loops, and platinum iridium beakers—eventually filled with loose quartz—also answer the same purpose. Another field for research is with microcolorimetry. Feigl has succeeded in this way with extracts from as little as 200 mg. of blood. Determination of cholesterol is possible also with this technic. Picric acid reduction of sugar is another progress. In short, he concludes, "the reactive instrumental and theoretical possibilities of colorimetry and the wonderful nephelometric findings open prospects of applying Bang's fundamental principle in untried fields which promise great progress." (Nephelometry is the method of analysis by measuring the brightness of light reflected by particles in suspension in a tube.)

Jan. 17, 1920, **41**, No. 3

*The Freezing-Point of the Blood in Diabetes. A. Lippmann.—p. 41.

Low Freezing Point of the Blood in Diabetes.—Lippmann calls attention to the lowered freezing point of the blood in eleven diabetics examined. In six of the eleven cases the freezing point was between —0.59 and —0.62 C., instead of the normal —0.56 to —0.58. The intensity of the glycosuria or glycemia did not parallel the drop in the freezing point. This permanently abnormal freezing point indicates, he declares, some disturbance in the mechanism regulating the osmotic tension of the blood, and that other reducing substances, besides the glucose, are retained in the blood.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 13, 1919, **2**, No. 24

*Reform in Medical Teaching. G. van Rijnberk.—p. 1933. Conc'n.
*Cancer of the Esophagus. Praag and C. E. Benjamins.—p. 1939.
*Cataract and Syphilis. J. A. Roorda Smit.—p. 1945.
Duties of Medical School Inspector. A. van Voorthuijsen.—p. 1953.
Recurrence of Scarlet Fever. M. W. Marsman.—p. 1955.

Reform in Medical Teaching.—Van Rijnberk's article was summarized in these columns, March 20, p. 838.

Cancer in the Esophagus.—The age (25), the long duration, and the survival for fifteen months after a fistula had been made into the stomach, the metastases in the skin, and the absence of metastases in organs nearby were special features of the case reported by Praag and Benjamins, as also the shortening of the esophagus. It measured only 16.5 to 19 cm. from the cricoid to the cardia, while the normal figure is said to be from 23 to 30 cm.

Cataract and Syphilis.—Smit recalls that potassium iodid and other drugs have been given empirically in treatment of cataract, but all except potassium iodid have been abandoned, and the absolute inefficacy of internal treatment has been proclaimed by Fuchs and others. Undaunted by others' experiences, Smit gave potassium iodid systematically to 6 patients with cataract. No benefit was apparent in 4 cases but in the 2 others marked improvement followed. The improvement in 11 other patients treated with mercury was pronounced in all and was most striking in some cases. All these patients have been under observation for several years; as also other cases not included in these statistics. The mercury was given intramuscularly every day; 0.01 c.c. in the form of the peptonate, in 3 c.c., plus 0.05 c.c. sodium cacodylate in 1 c.c. subcutaneously.

Norsk Magazin for Lægevidenskaben, Christiania

February, 1920, **81**, No. 2

*Deformity of Clavicles. J. Yttri.—p. 129.
Was Influenza Pneumonia Contagious? K. Motzfeldt.—p. 165.
*The Leukocyte Count in Influenza. R. Bache.—p. 176.
Endemic Oxyuriasis. M. Solberg.—p. 184.
*Carcinoids in Appendix. K. Nicolaysen.—p. 186.

Malformation of Clavicles and Skull.—Yttri has compiled considerable literature on congenital deformity of the clavicles, and describes an extreme case of cleidocranial dysostosis in a man of 66, and two similar cranial cases. The tendency to this malformation has been noted through two and three generations. Gegenbaur has reported a case in which a woman with this deformity transmitted it to her children by two different husbands; some of her children were normal. This type of dysostosis may affect the clavicles alone or the skull alone, but the two are generally combined, and there were often other bone deformities. The cleidocranial anomalies form a special type, although certain features suggest rachitis, inherited syphilis, etc. Puberty is late but not impaired. The anomalies seem to be of the mutation type, as de Vries uses this term for plants. That is, the changes appear apparently spontaneously and are transmitted to the offspring, but disappear by cross breeding. Among the 70 cases on record, 20 were reported from Germany and Austria, 15 from France, 9 from Sweden and 6 from North America.

The Leukocyte Count in Influenza.—Bache found leukopenia the rule in his influenza cases, but the leukocyte count ran up when empyema developed. In influenzal pneumonia, the death rate was lowest in the group with high leukocytosis.

Carcinoid in Appendix.—Nicolaysen reports three cases in women and two in men, and remarks that these carcinoid tumors certainly do not belong in the carcinoma group. In two of his cases the symptoms had been those of acute appendicitis; in one, of chronic appendicitis, and two had never caused any symptoms.

Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 31, 1919, **45**, No. 4

*Physiology of Physical Exercise. T. Resmark.—p. 383.
Psychic Constitution and Psychoses. H. Sjöbring.—p. 463.
Height of Swedish Recruits. G. Backman.—p. 494.

The Physiology of Physical Exercise.—Resmark has previously published eight reports on research on the physiology, balance, automatic action, statics and other elements of physical exercise. He here discusses the practical application of what is now known in respect to the physiology of exercise, applying it to school gymnastics, and urges the complete discarding of the traditional systems of exercising based on incorrect conceptions of the physiology of movement. Then we can build up a new pedagogic system when the ground is swept clear. The fundamentals for this are already provided.